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THE
BRITISH JOURNAL
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Original Articles.

SOME OBSERVATIONS ON THE MEDICAL TREATMENT OF INFANTILE PARALYSIS.

By Charles Mackay, M.D.Melb.,
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The treatment of infantile paralysis (acute poliomyelitis) is of the greatest importance both to the individual and to the community.

As Mackenzie says, "It attacks apparently the most healthy types, and unless the correct treatment is recognised it ruins physically those it is unable to slay, converting perhaps in a night the healthy child into a cripple."

If infantile paralysis were a disease in which a generally known and accepted line of treatment gave uniformly successful results, it would be superfluous to point out that treatment must be based upon a clear conception of the nature of the disease, and of the pathological processes underlying the symptoms.

Farquhar Buzzard, in his Goulstonian Lecture of 1907, states: "It is an acute specific fever occurring sporadically and epidemically; its essential lesion is an inflammation of the interstitial tissue of the central nervous system due to the presence of micro-organisms or their toxin, probably in the blood, but possibly in the lymph circulating within that system."

Much recent work has been done on poliomyelitis, especially from the pathological point of view, and extensive experimental investigations have been made on the disease in monkeys.

Buzzard's conception of the disease was a distinct advance on the one that this disease was entirely an affection of the anterior cornual cells of the spinal cord and was localised to them.

A more recent and perhaps wider point of view is that there is an acute inflammatory process in the central nervous system over a wide-spread area, and that there are also visceral lesions especially in the lymphatic organs.

The cause of this acute specific fever is stated by Flexner to be a minute filterable micro-organism,. which has been secured by him in artificial culture, and is distinctly visible under the higher powers of the microscope. The virus is suspected to enter the body by way of the mucous membrane of the nose and throat.

The conception of the disease which expressed itself only in terms of the old atrophic lesions in the anterior cornual cells was necessarily narrow, and concerned only with the resulting paralysis, which should really be regarded as an incidental occurrence in a general infectious disease. This view for a long time dominated all ideals of treatment, and prevented a hopeful attitude being formulated or maintained; the inherent possibilities of recovery in the muscle were ignored, and no hope was entertained of sufficent anterior horn-cells having survived or recovered.

Mackenzie, who was a pioneer in the field of muscle re-education in infantile paralysis and who is chiefly responsible for this method of treatment, began his work at the muscle end of the neuro-muscular system, and having proved that muscle power was recoverable in old cases of paralysis, he was impressed with the urgent necessity of beginning this line of treatment as early as possible in recent cases.

Draper makes another point when he says—"It is curious that notwithstanding the gradual realisation, resulting from many severe epidemics, that the malady was of an infectious nature, clinicians and the public have been loth to give up the fixed conception that paralysis is the beginning and end of the story."

The term "infantile paralysis" is doubly a misnomer, as it leads us to consider the disease as one of infancy only, and secondly to consider the paralysis as an essential part of the disease; it has recently been pointed out that non-paralysed cases comprise 50 per cent. of patients affected, and some observers put the numbers as high as 70 per cent.

From the practitioner's standpoint, however, we must consider paralysis as the diagnostic, all-important and engrossing feature of the case; in the natural course of the malady his efforts in the paralytic type of case have been palliative rather than curative, and he is suddenly called upon to treat a child who has recovered from its fever, but who has developed a severe paralysis.

One of our first considerations which may be overlooked is that we are dealing with a notifiable disease. Since 1912 notification has been compulsory. The classical cases reported by W. Pasteur in this country in 1897, when he recorded the infection of seven members in one family, should bring home to every physician's mind the grave obligation of recognising poliomyelitis as being definitely infectious and contagious. The period of infectivity is stated to be about four weeks.

Our next consideration is the acute stage, or, as some writers describe it, the period of prodromal symptoms before the appearance of paralysis. If, however, we consider the paralysis as a complication or sequela of the disease, and recognise that the majority of cases have only transient muscle weakness or none at all, then the acute stage of fever, restlessness, hyperæsthesia, pain on movement, stiff neck, etc., marks the disease itself. It may be argued that in many cases paralysis is the first and only indication of anything being wrong with the child. Investigations on this disease during large epidemics in Sweden and America have demonstrated that it is only a comparatively small number of cases in which the acute stage with paralysis really seems to be the first outward manifestation of the disease.

Peabody, Draper and Dochez in the monograph issued by the Rockefeller Institute state that in their opinion the prodromal, or, as I prefer to call it, the acute febrile period, has in the light of our present knowledge of the epidemiology and of our hopes for a therapeutic control of the disease assumed an unexpected prominence. It is during this period that we must isolate and quarantine; this is therefore the most important stage of the disease from the point of view of the community, for on its recognition depends the possibility of controlling the infection, and it is only in this period before an extensive destruction of nerve-cells takes place that one can ever hope to make treatment thoroughly efficient.

However skilled our treatment of the paralyses may be, prevention is better than cure, and if the disease could only be recognised sufficiently early and specific curative treatment given the paralyses might become a comparatively rare complication.

How early can a diagnosis be made, and what specific treatment is to be given? These are the problems which I feel certain will be solved in this as in other diseases. Skilled laboratory assistance is essential, and the lines indicated are lumbar puncture for diagnosis and serum therapy for treatment.

Anterior poliomyelitis is a disease which confers a definite immunity on the recovered victim, and herein lies a germ of hope.

If there be no local or general epidemic, the sporadic case, occurring as it frequently does away from the large centres of population, will always, I fear, be a surprise to us, and the diagnosis in the acute stage and even in the early paralytic may be a matter of grave difficulty. Once diagnosed, however, the seriousness of the problem should be apparent, and a recognition of the fact that we are now dealing with an acute inflammatory process of an infective nature attacking the central nervous system over an extensive area; and exhibiting a specially marked predilection for the lumbar and cervical enlargements of the spinal cord should enable us to formulate a satisfactory plan of treatment.

Early diagnosis in this disease is imperative, and is an essential part of treatment.

To simplify a little our conception of the course of the disease we may consider it with an artificial demarcation into three stages:

(1) The pre-paralytic or acute febrile stage.

(2) The paralytic stage.

(3) The post-paralytic or stage of residual paralyses with or without deformities.

It may be here remarked that the old cases of infantile paralysis become such definite surgical conditions that it is a little difficult to regard the disease itself as a purely medical entity, and to consider the sequelæ which may later require surgical interference not as inevitable consequences of the disease itself, but mainly as the results either of inefficient medical treatment or of parental neglect.

The physician in charge of a case of infantile paralysis during the paralytic stage requires a very sound knowledge of what we might call medical orthopædics, the understanding of the application of splints and retentive apparatus, and of the prevention of deformities. The late Dr. F. E. Batten was pre-eminently a physician of this character.

Except for occasional simple tenotomies it is considered that surgical operative procedures should not be undertaken during the first two years after the onset, during which period it is recognised that spontaneous recovery is possible and may be greatly assisted by anatomical rest and muscle re-education.

In spite of this apparent lack of the necessity for surgical intervention the pitfalls are many, and the physician will be wise to avail himself of his orthopædic surgical colleague's advice and assistance regarding the prevention of deformities, lest he lay himself open afterwards to grave reproach for neglect of definite principles of treatment.

It should be impossible to see cases of upper limb paralysis allowed to remain without support on some form of abduction arm splint; and that foot-drop should occur so frequently implies an ignorance of modern methods of treatment. We regard the non-recognition of a fractured bone and its immediate correct treatment as something more than a mere error of judgment, and the same criticism should apply with regard to the treatment of paralysed muscles: they must be appropriately splinted and rested as soon as recognised. Occasional deformities may occur in spite of every care, but they will be rare.

In the pre-paralytic stage Batten advised lumbar puncture not only as a method of diagnosis but also as a means of treatment; he also mentioned the use of human immune serum but only instanced two cases. This method of treatment, which gives hope for some therapeutic control of the disease, has been somewhat extensively used experimentally both in America and on the Continent. It is based on the experiments and observations of Flexner and Lewis, who showed that intra-spinal injection of serum derived from human beings or monkeys recovered from this disease would prevent paralysis in monkeys after intra-cerebral injections of virus. Netter applied these observations to the treatment of human cases. More recent work by Flexner and Amoss suggests a combined intra-spinal and intra-venous or subcutaneous route for the injection of the serum. Nearly 9000 cases of infantile paralysis were reported in the severe epidemic in New York in 1916, and the results of serum treatment would still appear to be very open to question as to its efficiency.

Isolation, and disinfection of discharges, with cleansing of the nose and throat with some neutral or mild antiseptic lotion, are procedures to be strongly advised.

In all grades of this affection the maximum degree of rest and quiet is indicated. We are dealing with an acute inflammatory condition of the central nervous system, and movement of limbs means irritation of the whole delicate and inflamed neuro-muscular mechanism. As Mackenzie puts it: "Since rest is the basic treatment of inflammation, only by the zero or anatomical position can the door be closed on all sources of irritation, and cord, nerve, receptive substance and muscle be placed at physiological rest; that is, only through the zero position can you offer the greatest physiological opposition to the sources of inflammation."

Complete rest may be preferably obtained on a frame, a double Thomas hip splint or other bed splint, and should continue as long as any fever, pain and tenderness persist. The condition should be treated as seriously as one would a gangrenous appendix, and in this way further damage may perhaps be prevented.

For any affection of the lower limbs complete rest in this way is best continued for about six weeks, to avoid if possible pelvic tilting and any undue external rotation of the thigh.

This careful support of the limbs and rest in bed will often relieve the painful symptoms, but in certain cases aspirin or even morphia may be necessary. Purgatives and antipyretics are to be given as required.

We now deal with the question of the treatment of the paralyses, and here it is absolutely necessary to approach our problem in an optimistic frame of mind, recognising that the disease is undoubtedly one which tends to recover, but which also requires skilled supervision, to avoid grave neglect on the one hand or meddlesome interference on the other, in order to enable this recovery to reach its highest point.

Our optimism, which is the only thing which is going to carry us through the long dreary months of uphill work, must necessarily be sane, and there is no reason to give any but the most guarded prognosis to the parents. "Wait and see" is here quite a legitimate motto.

If we adopt the above-mentioned generally cheerful attitude, if the diagnosis is made early, if treatment is as immediate as possible, and carried out on the lines to be indicated, then we have substituted for a not uncommon attitude of "nothing can be done for your child" one of action and comparative hopefulness.

A very pertinent question might naturally arise here as to the resonable basis for anyone adopting a hopeful attitude in this disease, remembering the mortality in severe cases, and the wretched cripples one sees in out-patient hospital work. Our only firm ground can be pathology and clinical experience.

Batten states that in the grey matter in the acute stage of the disease when the infiltration has not been too extensive the large cells of the anterior horn can be seen; some of them present a normal appearance, some are surrounded by infiltration cells, and others again are being destroyed by phagocytic neuroglia cells.

Draper's statement is important in this connection: "Particularly interesting are the observations that uninjured ganglion cells may be found side by side with other ganglion cells exhibiting extreme injury."

It is not unreasonable to assume that in this instance as in others in the body Nature has been lavish in her structural gifts to man, and that in her arrangements for the control of muscular movements each muscle or muscle group has in con-connection with it more anterior cornual cells than are essential for the obtaining of movement.

It is conceivable that we may lose many of our anterior cornual cells during the acute inflammatory process of poliomyelitis and yet retain or regain sufficient to carry on muscular function in the limb at practically the same level as before. Personally I prefer this explanation of undamaged nerve-cells or of recovered nerve-cells functioning to their full extent to that of Lovett, who thinks "that impulses might often be sent from the brain around the destroyed centres by new paths." The extent of the damage will of course vary with each individual case, but as we can never tell the extent of the permanent damage and of the residual paralysis, it is advisable to approach the treatment of each case with confidence, no effort being spared to obtain voluntary movement, when the amount of improvement obtainable will be a constant source of surprise and encouragement.

The conception of the neuro-muscular system as being an interdependent whole and the possibility of nerve-cell atrophy being prevented by muscle movement would help to explain the necessity for rest plus early muscle re-education as distinct from a policy of rest and relaxation of muscle alone.

Mackenzie says: "I ascertained that through the muscle treatment could be directed towards the restoration of function of what I regarded as the partially damaged anterior horn-cell, or towards the bringing of new nerve-control factors into play, remembering always cell adaptability and the precedence in biology of structure over function."

From the clinical point of view both Lovett and Mackenzie hold very strong views as to the possibility of recovery of function.

The former states that complete functional recovery occurs much oftener than was formerly supposed, also that most untreated cases or badly treated cases are capable of marked or great improvement by treatment. Mackenzie, whose clinical experience of this disease is extensive and who was one cf the earliest to advocate that treatment should be based on the idea of the disease being recoverable, reports ten upper limb cases seen in the first week with nine functional recoveries.

To achieve these good results diagnosis and treatment must both be as early as possible, and the outstanding lines of treatment are complete anatomical rest and muscle re-education.

The treatment for any paralysed muscle is immediate rest; but that alone is not sufficent—it must not only be immediate but also anatomical. It must be immediate; it admits of no delay because the disease at once destroys muscle adjustments, and so fine are these that immediately the nerve-cell governing the action of a flexor, for example, is affected its extensor opponent begins to overact, and this must be prevented for three reasons:

(1) It does not allow complete rest of the affected anterior horn-cell, being a constant source of irritation.

(2) By overstretching the affected muscle it interferes with its recovery.

(3) Even though the nerve-cell and affected muscle may recover their power, deformity is inevitably produced.

No definite time can be stated as to when muscle re-education should be begun, but the guides will be pyrexia, pain and tenderness; until the cessation of these the limbs are best kept at rest as advised and rested only.

The great underlying principle is to pick up a minimum function and to use it as the commencement. There is a zero position of muscle function for every muscle or muscle group; re-education must be commenced in this position, and carried on patiently and skilfully during the next two years at least.

It is impossible to say when improvement is no longer obtainable, Lovett reports a case of twenty-five years' standing, Mackenzie one of eleven years, and I have seen marked improvement in a left upper limb with a nine years' history.

Thymus gland has been advised in doses of 5 gr. three times a day, but it is difficult to be sure of the resulting benefit obtained by its administration.

Massage and electrictiy, the sheet-anchors of former methods of treatment, are considered by modern authorities to be not only useless but harmful in the early stages of this disease, and after that should be used with discretion to strengthen recovering muscle function, with re-education, as always, the prime curative factor. Warmth for the limbs under all circumstances is a necessity of treatment.

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A CASE OF LEUKÆMIA WITH SCALP NODULES.*

By T. H. Gunewardene, M.R.C.S., L.R.C.P.,

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It is with the hope of helping towards a solution of the obscurities which surround the so-called "Primary" blood diseases in general and those of children in particular that this case is recorded. It is of special interest in that it had been under observation for over eight months with fairly regular blood-counts and was at first looked upon as an aplastic anæmia, and subsequently, owing to the quick recovery under treatment, was renamed "secondary anæmia of unknown cause," but finally turned out to be leukæmia, probably of the myeloid variety, with the simultaneous development of nodules mainly of the scalp. Of further interest are certain anomalies in the blood picture, the occurrence of an infectious fever (measles) followed by a change in the blood picture, and the post-mortem findings. These will be subsequently referred to.

The clinical history is as follows: The patient, a boy, aged 3 years and 4 months, was admitted to the East London Hospital for Children, Shadwell, under Dr. Clive Riviere on March the 14th, 1919. The symptoms on admission were those of any severe anæmia, namely disturbed sleep, irritability, pica, anorexia, headache and a troublesome cough.

Family History.—Patient was one of two children; the other child as well as the parents were healthy.

Previous History.—No infectious fevers.

History of present illness.—In December, 1918, the child was treated as an in-patient in a hospital for three weeks for "bronchial catarrh" and was reported to have been pale and slightly jaundiced at the time.

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* The case was reported to the Section for the Study of Diseases in Children of the Royal Society of Medicine on October the 24th, 1919.

On admission, March the 14th, 1919, we found the boy extremely pallid, of a lemon-yellow tint but not jaundiced, fairly plump, and with a lethargic appearance and no purpuric manifestations. The gums and teeth were healthy. The tonsils were large but not inflamed. The posterior cervical, axillary, and inguinal glands were just palpable, firm, discrete and freely movable.

The lungs showed nothing abnormal.

The heart was much enlarged, with diffuse pulsation over the præcordium, and dulness extended to one inch outside the left nipple line and to nearly the right nipple line. Systolic and diastolic murmurs were heard all over the præcordium.

Abdomen.—The liver was enlarged, being two inches below the costal margin, but the spleen was not enlarged to percussion or palpation.

Ophthalmoscopic examinations on two occasions gave negative results.

Wassermann and Von Pirquet tests were also negative.

The urine was examined several times and showed on a few occasions, according to the pathologist, "the faintest detectable trace of albumin." A few red cells and few granular casts were seen at times. No ova or parasites were present in the fæces. Cultures from them revealed the *Bacillus coli.*

The first blood examination done on admission gave the following result: Red cells, 760,000; white cells, 8400; hæmoglobin, 11 per cent.; colour index, ·8. Differential count: polymorphs, 9·5 per cent.; lymphocytes (large and small), 85 per cent.; hyalines, 2 per cent.; myelocytes 2 per cent.; 200 cells were counted, no nucleated red cells were seen. There was marked anisocytosis, poikilocytosis and polychromasia.

PROGRESS.

To describe the progress of the case it is necessary to mark out three periods.

(1) From the date of admission, March the 14th, to April the 29th, when the child developed measles and was sent home.

(2) From the date of discharge to August the 7th, when the nodules were first noted.

(3) From August the 7th until death.

To take the first period: The child was extremely pale with a hæmoglobin percentage of 11·1, a red-cell count of 760,000, white cells 8400, polynuclears being 9·5 per cent., lymphocytes 86 per cent., and the myelocytes 2 per cent. Then under treatment there was a marked improvement at the end of five weeks, as shown by the greater interest taken by the child in his surroundings, his improved colour, the hæmoglobin of 61 per cent. and nearly 3,000,000 red cells. The percentages of polymorphs and lymphocytes were now quite reversed, being 62 per cent. and 21 per cent. respectively, instead of 9½ per cent. and 86 per cent. Nucleated cells appeared and poikilocytosis became less and less marked. The cardiac dulness became much diminished; both systolic and diastolic murmurs were now absent.

Treatment during this time consisted of intramuscular injections of soamin 1 gr. and ferri et amon. cit. 2 gr. on alternate days. Twelve injections were given in all. Red marrow and arsenic and iron were administered by the mouth.

Now to take the second period, during which the child was out of hospital until the discovery of nodules on August the 7th. I must add here that I had been examining the child for nodules at each of his frequent and regular visits. Judging by my notes the nodules must have appeared some time after July the 4th, and this period I missed as the child was away at the seaside. A synopsis of the blood-counts made at this time shows with considerable regularity 4,000,000 red cells, 60 per cent. hæmoglobin and an average of 13,000 leucocytes. The differential counts were normal for a child of this age, with the exception of a polynuclear increase at the expense of the lymphocytes on one occasion. It is noteworthy that no myelocytes nor myeloblasts were found during this second period.

Now, to come to the third period, dating from the first detection of the nodules on August the 7th. There were eleven nodules of varying size on the scalp, the largest being about ½ in. in diameter. They were harder and paler than the rest of the skin and, as a skiagram showed, not attached to the bone or periosteum. The left palpebral fissure was wider than the right, this being due to what was apparently a nodule in connection with the periosteum at the left infra-orbital margin. The superficial glands, which had never been more than just definitely palpable, were now recognisably enlarged, discrete and freely movable. No abnormal cells were seen in the blood at this stage.

On September the 6th the nodules in the scalp, eighteen in number, and the one over the infra-orbital margin were larger still, and two cutaneous nodules appeared in the right posterior iliac region and the right thigh in front. The glands were enlarged as before, and both testicles were now found to be equally enlarged and of almost stony consistence without any tenderness. It was on this date, September the 6th, that myeloblasts to the extent of 20 per cent. first appeared in the blood picture with a hæmoglobin percentage of 72, 5½ million red cells, and a leucocyte count of 13,000. No poikilocytosis nor nucleated red cells were present.

Immediately after admission no treatment was given for three weeks, with the result that, although the nodules became decidedly smaller and the testicles regained their normal size and consistency, the hæmoglobin content of the blood depreciated from 72 per cent. to 44 per cent. and there was a drop of about half a million red cells; these changes were evidenced clinically by progressively increasing pallor. Now comes an important series of events:

On September the 23rd the highest recorded leucocyte count was obtained, namely 69,000. On the 24th treatment was commenced, which consisted of an injection of soamin and iron citrate; on the 25th the temperature, which had hitherto been normal, registered 101° F., and a swelling appeared in the right axilla and unconnected with the site of injection. This swelling simulated an abscess very closely and was incised without any pus being found. For four weeks subsequent to this the temperature fluctuated between normal and 102° F. This, with the exception of a slight temperature of one week's duration in March, and the last four weeks preceding death, was the only time the child ran a temperature. The blood-count on September the 23rd shows, as I have already stated, 69,000 leucocytes with 86 per cent. myeloblasts. This high leucocyte count of 69,000 dropped within 14 days to 7200.

Judging by the child's general condition on October the 15th he seemed to be taking a turn for the better, and this coincided, as is shown in the chart, Fig. 1, with the return of the polymorphs to 41·5 per cent. on the count of this date. This period, however, was very transitory. The child's condition steadily declined and he died on November the 27th. The following, briefly stated, are the changes noted on the respective dates:

November the 2nd: More nodules on the scalp, increasing pallor, slight puffiness of the knee and ankle joints, lower end of the femur very tender and very slight pyrexia since October the 30th.

November the 8th: Nodules in the scalp larger still and more numerous, spleen just palpable, liver 2½ in. below costal margin.

November the 10th: Many nodules of the forehead, scalp and eyebrows; cervical and inguinal glands very much larger. Extreme pallor and of a lemon-yellow tint. Abdomen large and full. Diffuse purpuric rash on chest and abdomen, a few lesions scattered over both thighs; swelling, tenderness and œdema of both ankles (lower end of tibiæ).

November the 13th: Skin over the chest and abdomen is now of a mottled cyanotic appearance. No pain, swelling or tenderness of the ankle. Spleen palpable and well below costal margin. Hurried respirations.

November the 26th: Scalp nodules smaller than before and fewer in number. Bleeding from the gums and extreme pallor.

November the 27th: Death.

The clinical history of the case can be summed up as follows: A boy, aged 3 years and 4 months, with an apparently idiopathic severe anæmia of 11 per cent. hæmoglobin and 760,000 red cells, responds, as evidenced by his general condition and blood picture, to treatment in five weeks. Then he contracts measles, and about three months later develops nodules, mainly in the scalp, exhibiting at the same time a different blood picture which is also most unusual, in that he shows a hæmoglobin percentage of 72, red cells of 5½ million, together with what we look upon as myeloblasts. Without treatment some of the nodules disappear and others become smaller, but with a reduction of the red cells and the hæmoglobin content. With the commencement of treatment, *post hoc* or *propter hoc*, the temperature shoots up and a soft tender tumour develops. The treatment is now discontinued for a fortnight, and recommenced owing to the steadily increasing anæmia, but with no evidence of any improvement; eventually, with all the accompaniments of any severe anæmia, death takes place. Of unusual occurrences were the tender hyperæmic swellings in connection with the lower ends of the bones (tibiæ and right femur) which subsided in a few days; the gradual enlargement of the nodules with the decline of the patient's condition, and the disappearance of some of these twenty-four hours before death. The enlargement of the testicles, however, never recurred, nor was there a recurrence of cardiac dilatation or murmur of any sort in spite of the extreme severity of the anæmia.

BLOOD PICTURE.

The fluctuations of the total leucocyte counts and of the different cells are shown graphically in Fig. 1. The base line represents the normal (1) for the age. The different blood-counts are also tabulated below.

The chart shows strikingly the increase of the red cells from 760,000 per c.mm. on admission to 5½ million on August the 7th, and

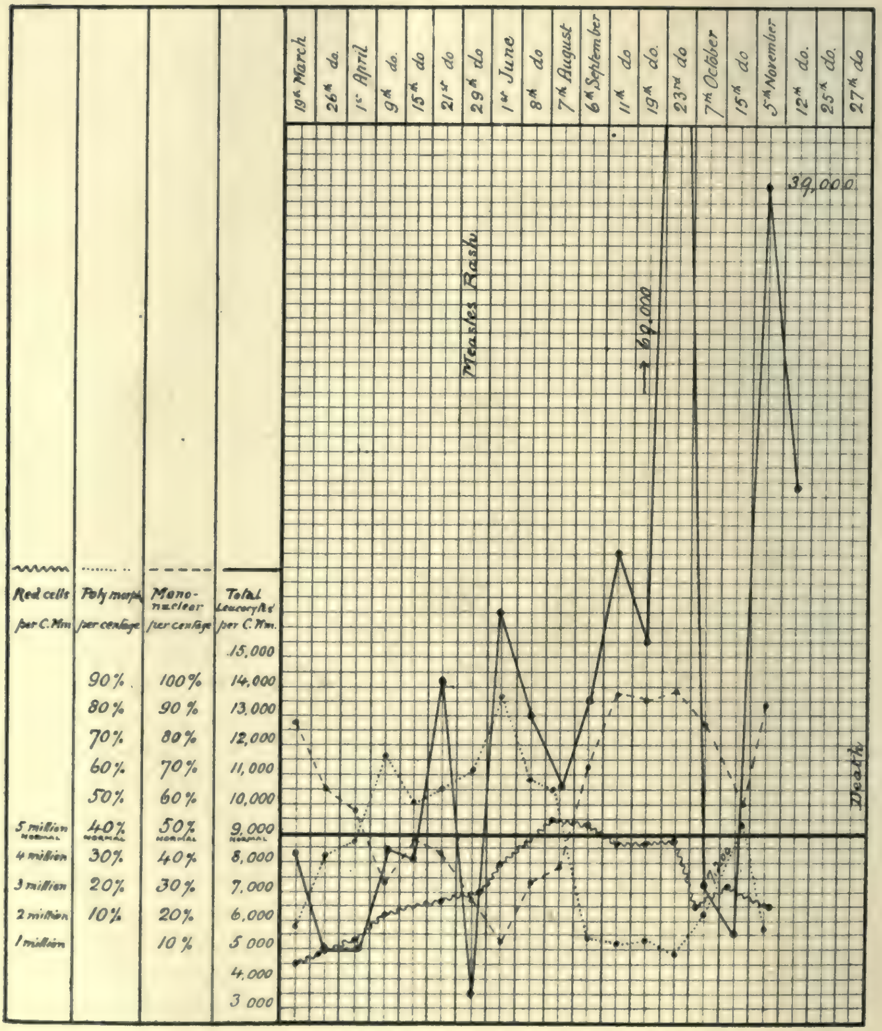

FIG. 1.

then the slow but steady decline. The 88 per cent. mononuclears on admission were mainly (86 per cent.) lymphocytes, while towards the end they were almost wholly the premature type of cell here looked upon as myeloblasts and premyeloblasts. The steady rise of the polynuclears (neutrophil leucocytes) from 9·5 per cent. on admission to 86·5 per cent. on June the 1st corresponded to a steady fall of the lymphocytes and coincided with a marked steady improvement in the child's general condition. With the increase of the mononuclears (now myeloblasts) from August the 7th and the steady fall of the polynuclears the child's condition seemed to change for the worse. The curve for the total leucocytes shows anything like a leucocytosis (69,000) only on one occasion (September the 23rd) and this within a fortnight dropped to 7200 per c.mm. Incidently

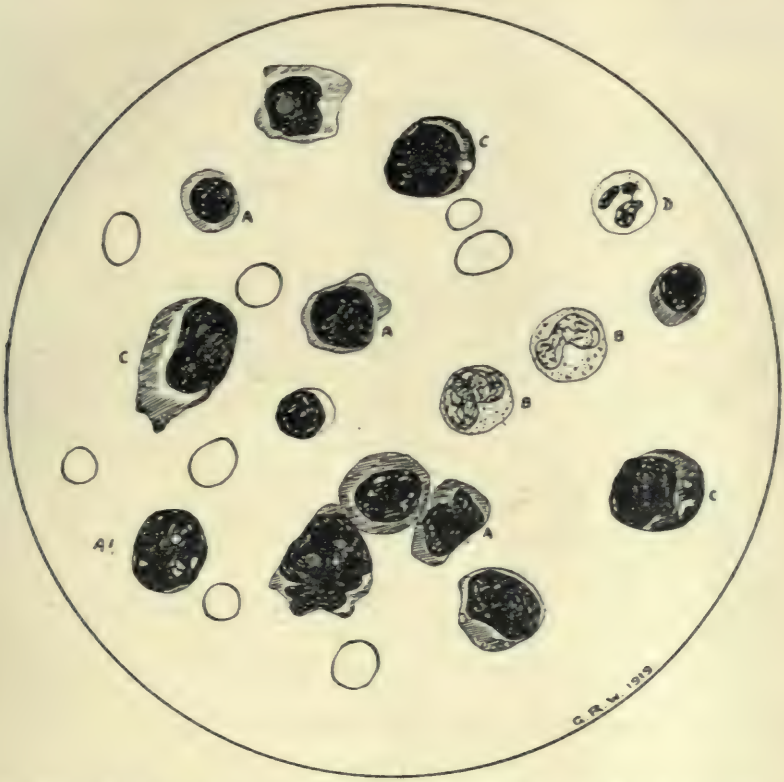

FIG. 2.—A. The most frequent type of cell, with deeply staining nucleus, occasionally one or more nucleoli and homogeneous cytoplasm, taking the basic stain to a moderate extent. A^1. Same kind of cell with less protoplasm, and larger nucleus. B. Cells with reniform or convoluted nucleoli, with an open chromatin network and no nucleolus. Cytoplasm containing amphophil granules. C. Cells of the type of Turk's irritation forms, with deeply staining and often vacuolated cytoplasm. D. A polymorph leucocyte. Stained with Geimsa. Note also the variation in size of the red cells.

this curve also shows a leucopenia (3400), which is stated to be a frequent accompaniment of the rash of measles—April the 29th.

The type of cell present is shown in the camera lucida drawing, Fig. 2, for which I am indebted to Dr. Gordon Ward. The myeloblasts, C, are recognised on their morphology. As further confirmation the oxydase reaction was done by Von Gierke's method. Some of the cells gave the reaction and those that did not are looked upon as premyeloblasts.

POST-MORTEM EXAMINATION.

This was done twelve hours after death. The body was fairly well nourished with diffuse subcutaneous hæmorrhages over the trunk and the upper half of the inner side of the thighs. Numerous nodules of varying sizes on the scalp, but no discoloration.

Pleura.—Small punctate hæmorrhages in the visceral and parietal pleura, particularly on the diaphragmatic portion and over the posterior part of the lungs. No effusion into the pleural cavities.

Heart.—Macroscopic examination. No blood-clot in the heart cavities. There was extensive hæmorrhage in the right auricular wall. Cardiac muscle was of a uniform pallor. Microscopic examination: slight fatty infiltration, and well-staining muscle fibres.

Pericardium.—No increase of pericardial fluid. There were punctate hæmorrhages in both visceral and parietal pericardium, but more diffuse in the former.

Thymus.—Not enlarged; sections showed no definite hyperactivity, the cellular content being about normal.

Thyroid.—Not enlarged; the vesicles were half full of colloid material.

Peritoneal cavity.—No effusion. The great omentum was loaded with fat, and in the lesser omentum were minute lymphatic glands dark red in colour. There were also punctate hæmorrhages.

Spleen.—Occupied a portion well under the diaphragm. It was somewhat enlarged and weighed four ounces. Its consistency was firm and on section it was dark red in colour with many pinkish areas in its substance. Microscopically the areas consisted of cells taking the stain poorly. Large mononuclear cells resembling those seen in the blood and bone-marrow were present in large numbers. Only a very few Malpighian corpuscles were to be seen, and these were much smaller than normal. There was no proliferation of the fibrous tissue.

Liver.—Weight 1½ lbs. On section the colour was pale, smooth and oily. Microscopically there was a mononuclear infiltration of the portal tracts, and a moderate degree of fatty degeneration.

Pancreas.—Normal.

Kidney.—No myeloid tissue at the hila, but a good amount of of perinephritic fat. Right and left kidneys weighed 3½ and 4 ounces respectively. On section the cortex and medulla presented the same pale colour with no demarcation. Microscopically there is a cellular infiltration limited mainly to the connective tissue around the vessels. Lying free in the blood-vessels were cells of a similar nature. There was also marked cloudy swelling.

Suprarenals.—Normal.

Intestines.—Showed prominent Peyer's patches and solitary follicles. These microscopically showed the same mononuclear cell infiltration.

Scalp nodule.—On section there was no discoloration but it was paler than the rest of the scalp. The section included the skin, superficial fascia and muscle together with the scalp around considered normal. Microscopically this showed closely packed aggregations of large mononuclear cells, some of which contained oxyphil granules. This cellular infiltration was limited to the muscle layer, and no infiltration of the superficial fascia nor the periosteum. The portion of the scalp thought to be normal also showed a moderate degree of cellular hyperactivity.

Brain.—Macroscopically normal.

Dura mater.—Firmly thickened and adherent to the skull in eight places with the consequent destruction of the normal smoothness of the inner table.

Bones.—The marrow was of a thick, homogeneous yellowish pink colour (like pus mixed with a little blood). There was some thickening of the periosteum at the lower ends of the right femur and both tibiæ. Films made from the marrow showed *only two* kinds of cells, namely the normal red cell and the premature type of cell (here looked upon as the premyeloblast) in the proportion of 3 : 97. There were no erythroblasts.

Glands from various parts of the body were examined and found to be enlarged. The cervical glands microscopically showed hæmorrhage into their substance but no cellular hyperactivity. The other glands, however, showed varying degrees of hyperactivity, particularly so in the mesenteric glands.

CLINICAL DISCUSSION.

Let us now consider the points on which the diagnosis of myeloid leukæmia is based, what bearings the post-mortem findings have, and what causes could be attributed for this so-called "Primary" blood disease (leukæmia).

The diagnosis of leukæmia is almost entirely based on the presence of abnormal cells in the blood practically replacing all the other cells. The actual number of the cells is not of much help in this case as it was only on one occasion that anything like a leucocytosis was seen. It is quite possible that the blood would have shown a true leucocytosis, as is commonly seen in leukæmia, had the blood examinations been more frequent in the final stages. Owing to the presence of nodules the case comes under that clinical group of cases of "Nodular Leukæmia" (2), a term suggested by Dr. Gordon Ward. To attempt to differentiate which variety, whether myeloid or lymphatic, is to enter upon controversial grounds. Suffice it to say that this case is being looked upon as being of the myeloid variety because of: (1) the extreme rarity of lymphatic leukæmia or lymphæmia in childhood; (2) the presence of morphological myeloblasts in large numbers; (3) the presence of apparently the same premature type of cell to the extent of nearly 100 per cent. in the bone-marrow, and to a lesser extent in the spleen. I must admit that, considering the chronic nature of the case, the persistent absence of myelocytes is difficult to explain.

Does this case throw any light as to the cause of leukæmia? There are two possible causes: (1) the vigorous treatment with iron and arsenic during the first five weeks; (2) the toxin of measles.

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PRE-LEUKÆMIA IN INFANCY.

By Gordon Ward, M.D.

I am indebted to Prof. Carlo Martelli, of the Royal University of Naples, for a reprint of his latest article (6) on diseases of children, but one may legitimately object to the fact that Italian publishers as well as our own so frequently omit from reprints a proper reference to the original journal in which the work appeared. I therefore venture to preface a short review by a plea to editors that they will bear more in mind that although those who read foreign literature may be comparatively few in number, it is well worth while facilitating international co-operation in the sphere of medicine. One simple way of doing this is to publish reprints of original work so that exact references can easily be made and given.

Prof. Martelli deals with a section of that large class of cases sometimes denominated Von Jaksch's disease, sometimes leukanæmia or pseudo-leukæmia or secondary leukæmia, and he puts forth certain original views on those cases which occur in infancy.

The clinical aspect of these cases comprises two chief features, which are anæmia and splenomegaly. It is well known to physicians that in the presence of this symptom-complex further physical examination is often productive of very little additional information.

But examination of the blood is often of great assistance. It may show an anæmia with low colour-index and a paucity of white cells; the case is then referred to the "splenic anæmia" group. Even in this country there are quite sufficient subdivisions of the group to render more exact diagnosis difficult, but in Italy there are two further diseases with which we are little troubled, viz. malaria and infantile kala-azar. More technical examination of the blood may reveal syphilis or acholuric jaundice. On the other hand the blood may show what may be described without misunderstanding as a myeloid blood picture. Probably the leucocytes are somewhat increased, and include a small proportion of myelocytes and of anomalous cells which the routine hæmatologist will class as pre-myelocytes, Turk's cells, plasma-cells or large mononuclears according to his bent. Then the colour-index is possibly above unity and certainly not distinctly low while nucleated red cells will be found now and again. Prof. Martelli does not distinguish for his purposes between this picture and the more definitely leukæmic condition in which a high percentage of abnormal cells is combined with a relatively low total count. The case recently reported by Gunewardene (3) would be a quite typical example of pre-leukæmia, if attention were concentrated on the blood condition in the early stages. But so also would be the classical cases of Von Jaksch (5), *e.g.* that recorded in 1889, and similar cases recorded since.

There is general agreement that we do meet with in infancy a certain number of cases reminiscent of leukæmia but not quite conforming to type, and rendered more obviously exceptional by the fact that acute leukæmia in infancy is so often a terrible and fulminating process.

For the moment we will put aside such cases as have been described by Ross (9), *i.e.* cases which differ from leukæmia only in the absence of increase in the number of leucocytes and concentrate on that form which is called "splenic anæmia of infancy or Von Jaksch's pseudoleukæmia"—a term which only becomes legitimate in advanced cases.

There are two very definite points of view here. Hutchison (4) in his Goulstonian lectures—and we have not advanced far since—says: "At the upper end of the scale we find severe cases which stand, as far as the blood picture is concerned, very close to myelogenous leukæmia, though never, I believe, really merging into that disease." On the other hand, we have Martelli urging that all these cases are potentially leukæmic, and if the disease is not checked may die of leukæmia. He calls preleukæmia an "agonal state," merely a prelude to the victory of true leukæmia—the last effort of the organism at resistance. Clive Riviere (8), writing in 1903, the year before Hutchison's lectures, sums up as follows: "Leukæmia of infants is not a separate disease but merely a still more advanced stage of this anæmia (*i. e.* Von Jaksch's)—that is, the difference between them is one of degree and not of kind." Thus Martelli seems to support an early and authoritative English view. Tixier (11), one of the leading French authorities on anæmias, published in 1912 a monograph on this subject which lies before me. But he is unable to come to a definite conclusion, except that the criteria of Von Jaksch's disease cannot be considered absolute, but merge by all transitional shades into the other severe types of blood disease in infancy.

The point at issue should be relatively easy to settle. Has anyone ever seen a case which was at one stage quite definitely acceptable as an example of Von Jaksch's syndrome progress to another stage in which it was equally definitely leukæmia? Graham Forbes (2) has published the sequence but he required five cases to give an example of each stage. More than this is wanted: the sequence should be watched and reported in a single case. Hugh Ashby (1) concerned himself with the gradation from simple rachitic anæmias to the Von Jaksch's type. Morse (7) gives many cases but none of assistance here, and Stillman (10), another American author, published a study of Von Jaksch's disease which is marred by the fact that his first case was a girl, aged 9 years, who seems to me to have suffered from quite another condition. It is therefore to be hoped that someone will take up the study of this condition with a view to determining whether Von Jaksch's syndrome does indeed merge into leukæmia or not. If it does we shall have a curable condition merging directly into one at present incurable, and there will be much room for a further study of what factors make the difference.

This brings us to Prof. Martelli's second point, viz. that his preleukæmic condition arises from the effect of one of several possible factors acting on an inherently defective organism. He states that the organism is always defective, inasmuch as the condition affects those of the lymphatic or thymo-lymphatic constitution. These terms are much in dispute, but those who have to do with sick children will realise what is in the professor's mind.

On this ground, he says, either syphilis or tuberculosis, sepsis or malaria may produce the preleukæmic state. In other words the ætiological factors are many. So also thinks Clive Riviere, and there is a somewhat general consensus of opinion on this point. The alternative is that Von Jaksch's syndrome is a separate entity with an ætiology and pathology of its own. This view is rather apt to be taken by those whose hæmatology has a teutonic bent, and is rather an inference from what is regarded as a constant blood picture than a fact capable of proof by itself. My own position (12) is somewhere between the two. I believe that intestinal sepsis is the determining factor but I am not prepared to say that any one intestinal organism is responsible. I also think that the element of rickets has far more importance than that of the lymphatic temperament, with which it is allied, if at all, as an equal effect of the same primary cause. However, the purpose of this review is rather to expound the views of Prof. Martelli and their relation to other views than to expound my own, which are always open to revision in the light of further information.

Perhaps the pædiatrist who shall see pre-leukæmia merge into undoubted leukæmia will also be fortunate enough to see some case merge into health on the removal of an obviously single ætiological factor, and will let the medical world have his observations thereon.

Meanwhile I would erect a target with the following words: "The unknown cause of leukæmia in the adult never produces anything but leukæmia in a child, and the cause of Von Jaksch's syndrome or of this type of Martelli's pre-leukæmia in a child will never produce the adult form of leukæmia even in an adult."

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CARDIAC ANGINA IN A CHILD OF SIX YEARS.

By W. J. Rutherfurd, M.C., M.D.Glas., late Captain R.A.M.C.

In childhood the occurrence of true angina pectoris is most exceptional. Heberden, to whom we owe the first clear description of the condition, met with a case in a child aged 12 years; Dreschfeld has recorded a fatal case occurring in a boy of the same age; Morison (12) never encountered it in children under twelve to fourteen years of age. Anstie (2) recorded a fatal case of angina pectoris in a boy with aortic stenosis, in whom the attack was induced by acute cardiac strain while running. Feytaud (4) describes recurrent anginal attacks, sometimes ending in death, as occurring in aortic aneurysm due to rheumatic fever—a condition the age-incidence of which is from ten to sixteen years. Mr. Hastings Gilford, of Reading (5), in one of his interesting studies of giant and dwarf conditions, mentions the case of a prematurely senile dwarf who died of angina pectoris at the age of eighteen years, and was found post mortem to have heart and aorta extensively calcified. Generally, however, as in the latter instance, it is a malady of the periods of involution, and as such attacks persons who are past the prime of life.

Some years ago I was called upon to attend a boy, aged 6 years, who was found to be suffering from dry pericarditis. It appeared that he had just returned home from a summer holiday at the seacoast where he had been taken ill, and he had been ill altogether for a fortnight. Previous to this illness he had never had any rheumatic or choreic manifestations, and examination failed to reveal muscular twitchings or unsteadiness, emotional disturbance, joint pains or swellings, nodules, or muscular tenderness.

He was a bright, intelligent child, but was unduly pale and emaciated; the temperature was 100·4° F., and his pulse-rate 112 per minute. The cardiac dulness was not increased, but accompanying the heart-sounds there was a continuous to-and-fro friction-rub particularly noticeable along the right cardiac border. Since the beginning of the illness he had had numerous anginoid attacks, one indeed having occurred on the day he came under observation, and these were usually accompanied by a feeling of chilliness. The pain, though it was described as occurring most often in the upper abdomen, was not infrequently referred to the outer aspect of the left upper arm at a point at or near the insertion of the deltoid—a part the child would apprehensively catch hold of and nurse during the continuance of the pain. These paroxysms were fairly intense, as they made him cry, and exhausted him so much that he usually fell asleep whenever one had passed off. During the course of the treatment there was no further recurrence of these attacks, the pain in the arm caused by which had been a source of considerable puzzle to his mother. Whether a favourable development of the case was the cause of this, or whether it was due to energetic steps taken to combat intestinal autotoxæmia, which seemed present, it is difficult to say.

This associated pericarditis was, however, undoubtedly the cause of the angina whether the constipation had helped to promote its recurrence or not. Hood (7) has recorded a similar co-existence of pericarditis and angina pectoris, but in the reverse order to their occurrence in this case. Powell (14) has given his experience that in the course of pericarditis anginoid attacks are sometimes, though rarely, met with, their gravity depending upon that of the cardiac lesion ; while that pain of any sort in pericarditis seems to be generally absent in the case of young children is stated by Roberts (15), who further states that "in exceptional cases pain of an anginal character, shooting up the left side of the neck, to the ear, to the shoulder, or down the arm, is associated with acute pericarditis ; but endocarditis has almost always been present at the same time, and generally chronic valvular disease also." It may thus be safely concluded that the concurrence of unmistakable dry pericarditis, anginoid attacks of such definite nature, a negative story as to rheumatism and chorea, and finally, an age-incidence of six years, must be almost unique.

It is of interest also to bring together a number of instances of what for want of a better term may be called the occasional tendency to various other sorts of early degenerative change that have been met with in a search of the literature while preparing this paper. A case of obliterative arteritis has been recorded (9) in a child aged 9 years, and Burn Murdoch (13) has recorded an instance of aortic aneurysm in a child. Aneurysm in the young is referred to by McGraw (11) and by Lewis and Schrager (10). Dr. A. Jacobi (8) has recorded a case of aneurysm of the descending aorta in a girl, aged 5 years. Sanné (16) has reported four cases of extraordinary precocity—one in a fœtus, and the others in children aged 2, 10 and 13 years respectively.

Aitken (1) records the case of a boy dying of endocarditis and pericarditis, who was found to have an atheromatous aortic arch and an aneurysm at the bifurcation of the abdominal aorta. Conway (3) gives the case of a primipara, aged 22 years, where delivery was complicated by a calcareous fibroid of the ovary. Gray (6) claims that calcareous infiltration of the tympanic membrane may occur even at the early age of twelve years, while Politzer states that he has come across cases of otosclerosis in persons between the ages of ten and fifteen. It is thus abundantly evident that cardio-vascular and other degeneracies may occur sporadically as a rare event, extraordinarily outside their usual age-incidence.

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See also a paper by E. Bronson and G. A. Sutherland on "Ruptured Aortic Aneurysms in Childhood, with Report of a Case," in the British Journal of Children's Diseases, 1918, xv, p. 241.—Ed.

SOME CLINICAL FEATURES OF TYPHUS FEVER IN CHILDREN.*

By A. Stroë.

Typhus fever in children is generally a mild disease. In the great majority of cases its course differs remarkably from that of typhus in the adult; the duration of the fever is shorter, being seven, ten or twelve days, and only rarely fifteen days. It is not until the age of seven years that typhus assumes the characters of the disease in the adult in a mild form. The temperature rises rapidly, and remains between 100·4° and 102·2° F. for a few days, and defervescence occurs by rapid lysis. The pulse ranges from 80 to 140. I have seldom observed arrhythmia.

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* A paper read before the Société médicale des Hôpitaux de Bucarest on June the 31st, 1919.

The character of the eruption varies. It is absent in 25 per cent.; in other cases it is very transient, and merely consists of a few lenticular spots, which disappear in twenty-four to forty-eight hours. In some cases, however, especially in children over seven years of age, the exanthem presents the same characters as typhus in the adult. In very young children I have sometimes observed a rash consisting of minute petechial spots, like those of purpura. A very constant sign in children is injection of the conjunctivæ, which is quite as characteristic as in the adult.

Signs of profound intoxication are extremely rare. I have never seen forms with bulbar phenomena. The dyspnœa never shows the same degree of intensity as in the adult.

Bronchitic *râles* are often found, but areas of congestion are exceptional in children. The liver is congested, and sometimes tender on palpation; the spleen is always enlarged on percussion, and in half the cases it was palpable. Albuminuria is present, but casts are rare. The cerebro-spinal fluid does not always show the reactions described in the adult by Daniélopolu. In several cases we found some lymphocytes and red corpuscles; in one case the reaction was very intense.

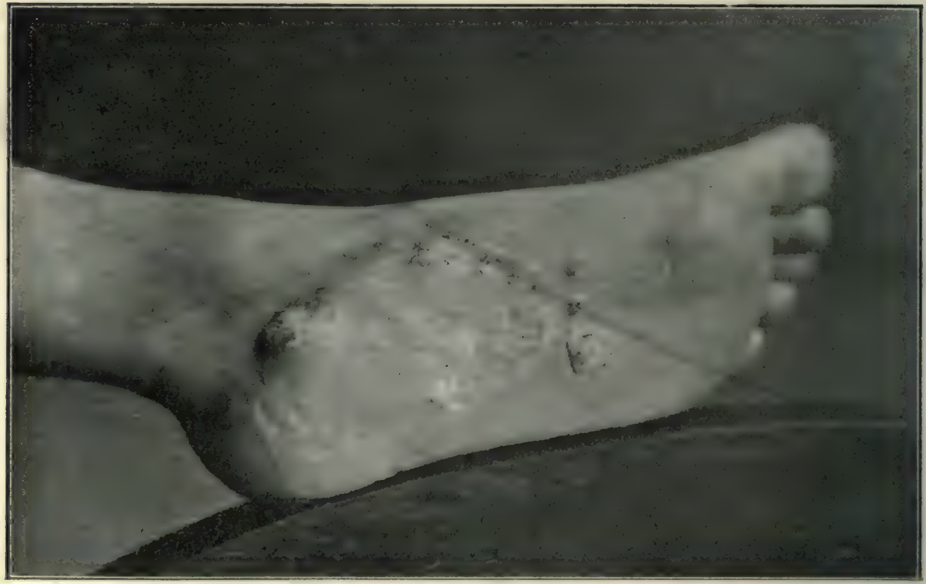
From what has been said it is clear that the diagnosis of typhus in the child may sometimes present great difficulties. The agglutination reaction with the various methods hitherto described may be of some value in these cases.

(1) This reaction was of great help in one of the cases of this kind, in which I employed cultures of the micro-organism which I described in 1917. (2) In November, 1918, I was able to obtain a culture of the Weil-Felix micro-organism at Bucharest. At that time the work published on the subject was not known in Moldavia. The Weil-Felix reaction yielded positive results in the great majority of 200 typhus patients in whom I tested it. In eleven cases the serum agglutinated the Weil-Felix organism only, and gave no reaction with the organism isolated in Moldavia. In some cases the agglutination was more marked with Weil-Felix than with the latter. (3) I found the agglutination reaction positive with a micro-organism which did not present any characters in common with the organisms hitherto isolated. These investigations will be published in a subsequent communication.

TUBERCULOSIS VERRUCOSA CUTIS OF THE FOOT.

By T. McCririck, M.A., B.Sc., M.D., D.P.H.,
Assistant County M.O.H., Cumberland.

The patient, a boy, aged 12 years, the son of a coal-miner, developed a few "pimples" on the middle of the sole of the left foot, and these gradually, in the course of four years, grew into the present warty growth covering the greater part of the thin skin of the sole and inner side of the foot, avoiding the thick skin of the heel and ball of the toes. Tuberculosis verrucosa cutis has its seat of election on the back of the hand, but occasionally it affects other situations as the face and the leg, and rarely the foot, and hence the interest of the present case.



Tuberculosis verrucosa cutis.

The greater part of the patch is beset with hard, wart-like growth, the most characteristic area being nearest to the hard skin of the heel, that of the centre of the sole being distinctly smoother and flatter. The greatest height of the growth above the general skin level is 3 mm. On the inner side of the patch are several small isolated nodules surrounded by purplish-blue skin. There is no purulent or sero-purulent fluid in the interstices of the projecting vegetations, nor is there any ulceration.

The family history is a tuberculous one on the mother's side, and a daughter died three years ago, at the age of nineteen, from multiple tuberculous abscesses, which required dressing for many years. This dressing was done by the mother as a rule, and no doubt was done in a very careless manner judging by the uncleanliness of the house, and the general fecklessness and want of intelligence of the mother. Two other boys and one girl of the family are healthy: two babies died in infancy of "lung trouble."

The apparent mode of infection is interesting. There seems little doubt in this case that the boy has been infected by the discharges from the sores of the sister, who died three years ago, and who was in an active state of tuberculous disease four years ago, when the boy's lesion began. The boy ran about barefoot in the warm summer weather, as is the custom in many parts of the country, and bare feet of course are liable to cuts and scratches, which form suitable points of inoculation for pathogenic organisms. This mode of infection is a common one in ankylostomiasis and in Madura foot. Moreover, the lesion made its appearance in the autumn, and allowing for the incubation period of the tubercle bacillus the time of onset fits in with the other evidence of infection. A striking analogy, also, is afforded by the mode of infection in verruca necrogenica or anatomic tubercle, in which the lesion occurs about the knuckles or other parts of the hand or forearm of dissecting-room attendants from handling tuberculous bodies. Fabry (3), again, has drawn attention to the association of tuberculosis verrucosa cutis and tuberculosis of the lungs in miners, in whom during the course of their work the back of the hand is subject to frequent cuts and scratches, affording points of inoculation for the tubercle bacillus scattered about from the sputum of the patient. It would appear, also, as noted by Béclère (1), that the fact of the dorsum of the hand being the seat of election of the disease especially in men is explained by the habit, which many tuberculous patients have, of using the back of the hand to wipe the moustache.

Local antiseptic treatment with tincture of iodine has effected but slight improvement, and it is hoped soon to put the boy under a course of picric-brass treatment as recommended by Ellis (2).

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ISOLATED DISEASE OF TARSAL SCAPHOID: KÖHLER'S DISEASE.*

By P. MAYNARD HEATH, F.R.C.S.,
Surgeon to the Evelina Hospital for Children.

A BOY, aged 7 years, knocked his left foot six months ago. He walked badly after the accident and the foot swelled a little, but it gradually recovered and he made no complaint for three months. The swelling of the foot then began again without pain or redness. When first seen the swelling had decreased, but was still present. It was diffuse over the inner border of the foot and most marked over the scaphoid. No redness or local tenderness were present. There were no other bony lesions. The boy walked with the foot abducted. There was no paralysis, but the calf was a little wasted. The foot was put in plaster-of-Paris in corrected position, and the boy was allowed to walk on it. Recovery ensued in three months.

There is a strong history of tuberculosis on the father's side and the boy looks delicate. The mother states that since the cold weather came on the boy has suffered from "bronchial trouble," and that when his chest was bad his foot swelled again slightly.

The diseased scaphoid shows the following X-ray changes:

(1) Smaller than normal.

(2) Outline irregular.

(3) Architecture impossible to recognise owing to cortex and spongy portion running together.

(4) Density greatly increased.

These agree with the description originally given by Köhler except that in his cases the outline of the bone was regular.

Recent skiagrams taken after an interval of six months show that the bone has returned to normal size; its density is very much decreased, but it is apparently divided into two parts by a cleft.

The boy has now no symptoms.

Three cases of this condition were described by Köhler in 1908; twelve other cases have been recorded, all true to the original type. The condition is always found in boys between the third and ninth years. The onset is as a rule gradual, but may be sudden. There is often an indefinite history of trauma, but in many cases no injury has occurred. Pain and lameness are the first symptoms, accompanied in most cases by swelling and tenderness over the scaphoid.

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* The case was shown before the Section for the Study of Disease in Children of the Royal Society of Medicine on October the 24th, 1919.

One case showed local heat and redness. The condition may recover and relapse again, but the ultimate tendency is towards cure irrespective of treatment. Köhler stated that the disease is likely to extend over two to three years. The scaphoid is then said to return to normal.

The X-ray appearances are very characteristic:

(1) Half to a quarter smaller than normal.

(2) Form generally regular, but may be irregular.

(3) The architecture impossible to recognise, cortex and spongy portion running together.

(4) Density increased two- to fourfold.

Pathology.—Various suggestions have been made as to the origin of the condition:

(1) Compression fracture (Stumme), negatived by the absence of trauma, gradual onset, and the rapidity with which it heals.

(2) Tuberculosis: Fassett believes it to be a tuberculous lesion, healed and sclerosed. Most authorities agree that the condition is not tuberculous on account of its clinical course. Hetzel investigated his case carefully and the von Pirquet and Wassermann reactions were negative.

(3) Preiser reported several cases of typical fracture of the carpal scaphoid with the following mechanism: Following slight injury there has been disturbance of surrounding ligaments causing pressure on blood-vessels, with resulting defect in blood-supply to the bone and rarefaction of the latter, with finally compression fracture. He argues that a similar sequence may occur in the foot.

(4) O'Brien thinks the condition is due to delayed development of the ossific centre of the scaphoid, which is stimulated to osteogenesis by trauma, though the agency of pathogenic organisms has not been ruled out. Pain and swelling may be due to post-traumatic osteitis.

I think the most interesting facts in the ætiology are that in one case reported by Köhler a similar process was discovered in the patella of the same side, and that the patient in Rotch's case had a twin brother in whom X rays showed a similar condition in the scaphoid without symptoms. These two cases show that the condition is primarily one of defective ossification of the scaphoid. I am inclined to think that it is not a delayed development as other have stated, but a premature ossification in the scaphoid, which is normally the last bone in the tarsus to ossify, this leading to diminished size and increased density. The small size may lead to weakness in the attachment of the scaphoid ligaments with subsequent stretching and weakness of the foot. Any strain will then give rise to pain and swelling.

Treatment.—Relief of the strain on the inner border of the foot by an appropriate boot or plaster-of-Paris, and exercise for the calf muscles.

I suggest that we call the condition "isolated abnormality of the tarsal scaphoid." I believe it to be more common than is generally supposed.

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CONGENITAL REDUNDANT EXTERNAL MEATUS; REPEATED ABSCESS-FORMATION; EXCISION.*

By Dan McKenzie, M.D.,

Surgeon, Central London Throat and Ear Hospital.

The subject of this rare deformity is a little boy, aged 7 years.

At birth his doctor noticed a redundant auricle on the *right* side which he attempted to remove. At the age of one year the child developed an abscess behind the *left* auricle, which, apart from its being rather prominent, seemed to be normally formed, and this abscess, which pointed both into the meatus and behind and below the auricle externally, was opened and curetted by Mr. George

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* A paper read before the Section of Otology of the Royal Society of Medicine on November the 21st, 1919.

Wilkinson, of Sheffield, to whom I am indebted for these notes dealing with the early history of the case.

From the nature of the contents and the extent of the cavity Mr. Wilkinson suspected that he had to deal with a suppurating dermoid cyst, but nothing further was done at the time, as he considered that the septic condition of the cyst precluded an extensive dissection. Shortly afterwards the parents left Sheffield and he lost sight of the case. At the operation, however, he removed the redundant auricle on the *right* side. Since that time abscesses had formed behind and below the left auricle on two separate occasions, each being opened, and, after a time, closing up again. About a month before I first saw the boy a third recurrence took place, and the abscess was opened for the fourth time in my absence on holiday by Mr. Archer Ryland, who reported that the trouble seemed to be confined to the soft parts, as he could not make out any connection with bone.

When, on August the 20th, 1919, I first saw the patient there was a sinus discharging pus in the lower mastoid region, while another but much smaller opening was present in the posterior-inferior wall of the external meatus close to the conchal margin. The tissues around the lower part of the ear were swollen and infiltrated, and pus could be pressed from a deep situation in front of the mastoid process and below the auricle. Temperature and pulse were normal. The tympanic membrane was also normal and there did not appear to be any deafness.

The likelihood of some dermoid or other congenital malformation occurred to us, and our suspicions were confirmed on hearing from Mr. Wilkinson as above. Accordingly the affected region was exposed by a post-aural incision, and, the auricle being displaced forward and the parts cleaned, what seemed to be an additional external auditory meatus was removed (in two pieces). It consisted of a tubular structure about an inch in length and ending blindly. Cartilage could be felt in its walls, and it was lined with skin. It occupied a position anterior to the mastoid process and immediately below the normal meatus, the bony floor of which seemed to be deficient, but which otherwise seemed to be normal. No difficulty was experienced in effecting the separation of the two canals. The redundant meatus was surrounded, especially towards its outer end, by a collar of thick fibrous tissue, and this part of the tube, together with the tissues around it, was bathed in pus. The opening of the accessory meatus into the external meatus was quite minute, but it was skin-lined and gave us the impression of its being a permanent fistula. The opening below and behind the auricle led first into a subcutaneous abscess-cavity and through that into the accessory meatus. A substantial cartilaginous nodule lying close to the posterior surface of the normal auricular cartilage was also found and removed. It lay much higher than the redundant meatus and seemed to be quite distinct from it, although it probably corresponds to the auricular cartilage of that meatus. The child rapidly recovered after the removal of the meatus and is now quite well. Its removal, I must add, necessitated the clearing of the fistulous opening into the normal meatus.

The specimen has been examined by Dr. Wyatt Wingrave, who reports: "This specimen shows all the elements of an aural meatus, but distributed most erratically. There are islands of cartilage but not a cartilaginous plate. Glands (sebaceous) and hairs are embedded in a dense mass of fibrous tissue which has evidently formed the greater part of the tube, which is bounded by muscle-fibres. Here and there suppurating tracts or channels can be traced in the fibrous tissue. The lumen contains inflammatory products, *e.g.* leucocytes, epithelial cells and many varieties of bacteria. We have, then, a tube simulating a meatus with suppurating sinuses connected with it. Its eccentric construction may be (1) original, or (2) the result of chronic inflammatory changes subsequent to its formation. There are the materials for a normal meatus, but the construction is imperfect as in other accessory organs."

We may suppose the course of events in this case to be somewhat as follows: The cavity of the redundant, skin-lined meatus filled slowly with secretion like a dermoid. This became infected, probably through the fine fistulous opening into the normal meatus; an abscess formed which discharged partly through the fistulous opening; but, as this was too small for sufficient drainage, also into the soft tissues behind and below the auricle and thence externally.

This particular congenital malformation seems to be rare. I have not been able to trace any more than, at the most, eight cases recorded; in the majority of these the orifice and the external meatus are described as being divided by a septum or partition into two canals, one of which ends blindly while the other leads to the tympanic membrane. In only one case did the original appearances resemble those of the case just described, but the opening lay in the concha, while in one case the accessory meatus opened into the postero-inferior wall of the normal meatus close to its orifice. Abscess-formation does not seem to have been encountered in any previous case. Cases are recorded by Köhler, Bernard (bilateral), Macauln, Urbantschitsch (with an opening behind the auricle); but these are doubtfully congenital according to Spira, so that the cases in which the congenital nature is clear amount in all only to four. The undoubted cases are Brieger's (1896), Guranowski's (1898), Habermann's and Spira's.

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Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, October the 24th, 1919.

The President, Mr. J. P. LOCKHART-MUMMERY, *in the Chair*.

Sequel of the Case of Lipodystrophia progressiva shown on January the 24th, 1919. Dr. PARKES WEBER and Mr. T. H. GUNEWARDENE (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES 1919, XVI, p. 200).

Case of Lipodystrophia.—Dr. F. LANGMEAD.—The patient was a girl, aged 7 years. She was quite normal in development till Christmas, 1917, when wasting was first observed. About two months later after an attack of measles the wasting became more obvious, and progressed more rapidly. Subsequently she had an attack of acute rheumatism for which she was confined to bed for six weeks. On convalescence the wasting was remarkable and led to her admission to hospital. Examination showed that the wasting was confined to the upper part of the body and ended about the level of the umbilicus. The face and neck were distinctly affected, all the fat seeming to have disappeared. The arms were wasted. but to a less extent, and the thorax and abdomen showed the same condition progressively less in a downward direction. The lower limbs were normal and showed no pseudo-hypertrophy. The disappearance of fat was not accompanied by any loss of power or other symptoms, the child being in good general health.

Enlargement of Cervical Lymphatic Glands in a Case of Congenital Syphilis.—Dr. H. C. CAMERON.—The patient, a girl, aged 8½ years, showed clear evidence of congenital syphilis with Hutchinson's teeth, interstitial keratitis, and extensive cicatrisation of the palate. There were numerous enlarged glands in the neck, on both sides, on the occiput, under the chin, above the left clavicle and in the left axilla. The subcutaneous tissue of the neck was swollen, had been œdematous and formed a thick collar encircling the throat, in which the glands could be felt. There was no evidence of enlargement of the thoracic glands and the spleen could not be felt. Dr. Cameron considered that the glandular enlargement was directly connected with syphilis.

Sudden Occlusion of the Right Brachial and Femoral Arteries in an Infant aged 10 Days with Gangrene of Arm and Leg; Recovery of Arm; Amputation of Thigh.—Dr. H. C. Cameron.

Leukæmia with Scalp Nodules.—Mr. T. H. Gunewardene (*vide* p. 9).

Isolated Disease of Tarsal Scaphoid—Köhler's Disease.—Mr. P. Maynard Heath (*vide* p. 28).

Splenectomy for Splenomegalic Cirrhosis.—Dr. E. Bellingham Smith.—The patient was first seen by him in 1911. He was a small, puny boy and was said to be wasting; there was nothing definite to be found about him, except that he had a moderate enlargement of the spleen and liver. The spleen was then about three finger-breadths below the costal margin and the liver two finger-breadths below. In November, 1913, the spleen appeared to be actively growing, and the liver, after first enlarging, began to shrink. After three months' observation the spleen was found to be down to the umbilicus. About that time he had some bleeding from the mouth, and was said to have hæmoptysis. He was admitted to hospital when the spleen was practically resting on the left iliac crest. The liver was now no longer palpable. The blood, which showed a positive Wassermann reaction, contained 5400 leucocytes, and that was maintained during two months' active antisyphilitic treatment. Three months after admission the leucocytes dropped to 2400. The clinical symptoms suggested that the case was one of splenomegalic cirrhosis or Banti's disease in a subject of congenital syphilis. In August the spleen was removed. At the operation the liver was found to be cirrhotic. Twelve days after the operation there was a leucocytosis of 40,000, although a month before the operation the leucocytes were only 2400. The child had been in good health since the operation, which was now five and a-half years ago, and the blood was practically normal; red-cells 5,000,000, hæmoglobin 80 per cent., leucocytes 9400.

Familial Osteo-arthritis.—Dr. R. A. Armstrong showed two cases of chronic joint disease in the same family, the condition being regarded as an osteo-arthritis. The boy, aged 12 years, was brought to hospital complaining of pain in the left knee-joint. He had had occasional attacks of indefinite pains in the joints since the age of four, which were localised in the left knee at the age of seven. He had never complained of his hands, although his mother noted that his finger-joints were swelling as early as the age of four. A year ago he had had general rheumatic pains affecting most of his body; he was not feverish at the time, but had a slight swelling of the left knee- and ankle-joints, which were tender to the touch. Nothing could be found on palpation, nor was there any limitation or undue freedom of movement in the left knee and ankle; the other major joints were normal. There was very marked enlargement of the finger-joints—the more pronounced for the relative slenderness of the phalanges themselves, due to wasting of the soft parts—and this condition was especially marked in the distal interphalangeal joints, particularly of the second and third fingers. There were well-marked knobs or bosses on the sides of the distal joints, which might fairly be likened to the Heberden's nodes characteristic of the type of osteo-arthritis of the smaller joints which occurred in adults. Skiagrams showed at present only atrophy of the ends of the shafts and epiphyses. The terminal phalanx of the little finger of each hand had undergone actual pathological dislocation towards the radial side. There was no grating, and no evidence of erosion of cartilage could be obtained, but the movements of the fingers were somewhat limited and the boy was unable to make a satisfactory fist. A similar but less advanced condition existed in the toes, and his habit of everting his left foot when walking expressed an unconscious attempt to lessen the stress of walking on the toes of that foot, of which he complained more than of the right. In all joints the pathological condition was articular with wasting of surrounding tissues and tendons rather than periarticular. In appearance the boy was rather pale and small, and he was below the average physical development for his age. No focus of infection had been found in the naso-pharynx or teeth. There was no enlargement of lymphatic glands and the spleen was not palpable. His sister, aged 11 years, showed a similar but less advanced condition of the finger-joints, the bony changes being relatively slight. The condition was slowly progressive, but she was to all appearance otherwise a healthy child. The mother had a typical osteo-arthritis of the smaller joints, which was becoming slowly worse. The two other children of the family—both girls—were free from the condition and both healthy. One child of a maternal aunt, a girl aged 20 years, developed a similar affection of the joints in childhood, and now had crippled fingers, and the maternal grandfather and great grandfather were also affected. Dr. Thursfield had devoted considerable time to a search through current literature and failed to find any reference to a condition similar to that described. It would seem that the cases afforded strong evidence in favour of the view that osteo-arthritis might truly be described as a disease of degeneration rather than due to an infective agent or to toxic absorption.

SECTION OF DERMATOLOGY.

November the 20th, 1919.

Case for Diagnosis.—Dr. E. G. GRAHAM LITTLE showed a boy, aged 15 years, with a waxy, semi-translucent tumour on the inner surface of his right ala nasi, about ¼ in. above the level of the surrounding surface and about ½ in. in diameter. The tumour had first appeared about the age of four and two attempts had been made to remove it, but it had recurred. The possibility of rodent ulcer suggested itself.

In the subsequent discussion the President, Dr. A. WHITFIELD, suggested that it was a localised sebaceous adenoma, Dr. J. M. H. MACLEOD thought the lesion was nævoid and partly composed of sebaceous tissue, and Dr. H. G. ADAMSON regarded it as an example of milium.

Case of Érythrodermie Congénitale Icthyosiforme.—Dr. H. W. BARBER.—The patient was a boy, aged 7 years, the last but one of a family of ten children. No other children in the family were affected, and no history of a similar condition of the skin among members of either parent's family could be obtained. He was a full-term child. According to the mother's statement he was born with thick whitish skin on the palmar and plantar surfaces; elsewhere the skin was quite soft and smooth. When four months old he developed lesions on the scalp and body, which were diagnosed as "eczema," but from the mother's description it was more likely that they were a bullous impetigo. When three years old the skin of the trunk and limbs became roughened and covered with horny growths, and the present appearances had existed for several years. The face was spared, and there was no ectropion such as was present in some cases. The scalp was scaly. The palms and soles were distinctly hyper-keratotic. The nails were poorly developed but not fissured. The skin of the neck, axillæ, antecubital fossæ, groins, popliteal spaces, elbows, knees and of practically the whole trunk was roughened, reddened in places, and covered with dark horny vegetations. In some parts, *e. g.* forearms and legs between ankle and knee, the skin was practically normal. A musty odour like that described in Darier's case was perceptible. There was no doubt that the case should be included in the group icthyosiform erythrodermia. It was very similar to a case described by Darier as "érythrokératodermie verruceux en nappes symétrique et progressive." A complete review of the literature would be found in the 'Journal of Cutaneous Diseases,' May, June, August, 1917.

Multiple Xanthoma in a Boy.—Dr. H. G. ADAMSON.—The patient was aged 6 years. The eruption was first noticed by the mother six months ago and had gradually increased. The whole trunk was covered with numerous small raised reddish-yellow plaques varying in size from that of a hemp-seed to that of a split-pea. There were a few lesions also in the neck, scalp, upper arms and thighs. The smallest lesions were slightly raised flat discs with a slight central depression. They had an angular margin, were soft to the touch and apparently quite superficial. Their colour was reddish-yellow, but on firm pressure the red colour disappeared and the lesion became of a bright sulphur-yellow colour. The large lesions were made up of very closely-set angular plaques blended to form a single plaque, but the elements of these could be made out by a slight grooving of their surface. There was no itching. There was no sugar or albumin in the urine. A microscopical section showed numerous xanthoma cells, many of them large and multinucleated. The eruption belonged to a group of cases which had been described as occurring in children and sometimes called congenital xanthoma, in spite of the fact that they did not always appear at birth nor even soon after. Some authorities had distinguished these juvenile cases from adult cases of xanthoma, and regarded them not as inflammatory but as new growths of nævoid character. The age of onset of the juvenile cases varied from birth to sixteen years.

SECTION OF NEUROLOGY.

December the 11th, 1919.

Complete Bilateral Spastic Paralysis of Face, Jaw, Tongue and Larynx, following an Acute Illness.—Dr. JAMES COLLIER.—A girl, aged 10 years, was in every way healthy and normal until six years of age when she contracted scarlet fever. Three weeks later, when convalescent, she was said to have acquired meningitis, the symptoms of which consisted in her developing a squint and becoming unconscious and lying semiconscious for three weeks. Her limbs were not paralysed during that time. She had never been able to speak nor to move her limbs voluntarily, nor to eat nor swallow naturally since regaining consciousness. She was a very intelligent child and wrote well. With the exception of slight perversity of movement in the use of the fingers (she constantly used the middle finger of both hands instead of the index finger for acts involving approximation with the thumb) the condition of the limbs and trunk was in every way normal. The ocular movements were normal and performed at command. Except for retraction of the angles of the mouth there was no volitional movement of the face, jaw, tongue or larynx. The face was in spasm, as shown by the frowning expression and the retraction of the angles of the mouth. The teeth were tightly clenched, with occasionally a little audible grinding, and the masseters were in spasm. There was much dribbling of saliva, which she circumvented with her handkerchief so as to keep herself quite clean. She fed by pressing soft food into her cheek with her finger, closing the oral aperture with her hand and squeezing it through the teeth by the pressure of her fingers upon the cheek. The reflex movement of the eyelids was normal. Reflex swallowing was normal. The emotional movements of the face in smiling and crying were normal, and during those movements only was the mouth opened and it was then opened widely. The associated movements of the face on effort were normal. She made no attempt at articulation. She had recently begun to use a slight laryngeal grunt as a query and as an affirmative.

SECTION OF OTOLOGY.

November the 21st, 1919.

Congenital Redundant External Meatus; Repeated Abscess-formation; Excision.—Dr. DAN MACKENZIE (*v.* p. 30).

Traumatic Facial Paralysis produced in an unusual way.—Dr. H. J. BANKS-DAVIS.—A boy, aged 8 years, was climbing a wall when he fell and was impaled on a fine-pointed iron spike, which perforated the tip of the mastoid process and produced instant facial paralysis. Reaction of degeneration on the left side was complete and the face was still paralysed after three months' electrical treatment. The wound in the mastoid was minute and the skin lesion only required one stitch. Rapid healing resulted with no complications whatever. Hearing was unaffected and a skiagram of the mastoid process was negative. The fine spike must have penetrated the mastoid and "hit off" the facial nerve in the region of the stylo-mastoid foramen. The boy was having regular electrical treatment and the palsy was diminishing.

SECTION OF SURGERY.

SUB-SECTION OF ORTHOPÆDICS.

October the 7th, 1919.

Case of Coxa Vara after Reduction of Congenital Dislocation of Hip.—Mr. E. LAMING EVANS.—The patient was aged 12 years. In March, 1913, Mr. Evans reduced by manipulation a left-sided congenital dislocation of the hip. The reduction presented no difficulty, and an X-ray examination after reduction showed no evidence of trauma either at the epiphysial line or in the neck of the femur. Retention was effected by a series of short unilateral plaster spicas in 90° of abduction and 50° to 70° of flexion for eighteen months; 50° to 70° of flexion was necessitated by a tendency to anterior transposition. During the last twelve months of plaster retention the child walked on a 5-in. patten on the left or affected leg. After the plaster was removed a $1\frac{1}{2}$-in. patten was used on the sound side, to maintain abduction of the affected side. When the plaster was removed the affected leg measured $20\frac{3}{4}$ in. and the good leg 21 in. The child had been kept under observation. Six years after reduction the leg measurements were: left, $25\frac{3}{4}$ in.; right, 26 in. Six months later the difference had increased to $\frac{1}{2}$ in., and the X ray showed a varal deformity of 100° occurring at the junction of the neck and great trochanter. The epiphysis was seen correctly placed upon the neck and situated correctly in the acetabulum underlying a well-formed roof.

The occurrence of coxa vara after reduction of congenital dislocation of the hip had an important bearing upon the functional results of a successful reduction. It produced a limp from shortening of the leg and from gluteal insufficiency, which, though of different origin and of lesser severity than that of unreduced dislocation, was nevertheless regrettable, and, if possible, to be avoided. The recognised causes had been classified under five heads: (1) Trauma inflicted at the time of reduction, either upon the epiphysis or the femoral neck; (2) prolonged weight-bearing, either before or after reduction; (3) absence of ossification in the head of the femur; (4) absorption of the ossific centre which had appeared; (5) acute traumatic reflex atrophy. That coxa vara was a not uncommon complication of successful reduction of congenital dislocation had been shown by Joachimsthal, Horvath and others. The points of interest in the present case were the remote period, *i. e.* six years after reduction, and the site of binding, *i. e.* at the junction of the neck and great trochanter. The functional disability with 100° of varal deformity was slight, but it necessitated further observation, and if progressive, treatment by a perinæal crutch.

Two Cases of Secondary Scoliosis.—Mr. P. B. ROTH.—Case 1: Scoliosis due to paralysis of erector spinæ. Girl, aged 8 years, first seen in December, 1918, with the following history: She had been a strong, healthy child till October, 1916, when after a few days' drowsiness and loss of appetite, followed by feverishness and vomiting, she was found to be completely paralysed in both legs. She was treated by massage, and after a few months by a jacket as spinal curvature developed, and then by plaster-of-Paris, which was applied twice. On examination by Mr. Roth in December, 1918, there was some paralysis of the right erector spinæ, with

)-shaped scoliosis, there being severe deformity of the right ribs posteriorly, while the upper part of the trunk overhung the lower part to the right. A tracing was taken of the amount of rib deformity, and daily treatment by posture and exercise begun. She was not allowed to walk about, but spent the day lying in a spinal carriage, either supine, or prone with her body supported on her elbows with a cushion under her chest. She was allowed to sit up to the table on a chair for meals. In the summer she was taught to swim. At the present time she was much stronger than when she was first seen in 1918, and there had not been the slightest increase in the amount of structural deformity of the ribs. Case 2: Scoliosis due to congenital malformation of the spine. Girl, aged 5 years, first seen on December the 12th, 1918. On examination there was **S**-shaped scoliosis, with severe deformity of the left ribs posteriorly and with moderate projection backwards of the right erector spinæ in the lumbar region. She could be placed in a very much improved position and could retain it. A skiagram showed that an extra half vertebra carrying a rib was interposed on the left side between the eleventh and twelfth dorsal vertebræ, and that only the right half of the ninth dorsal vertebra was present, it being fused with the body of the tenth; four ribs, two on each side, sprang from the fused mass. Other abnormalities were also present. A tracing having been taken of the amount of deformity, treatment by posture and exercise was begun on January the 9th, 1919. She now held herself in excellent position, and the rib deformity had not increased. The two cases were shown to demonstrate that the progress of deformity could be arrested without resorting to mechanical support.

Case of Infantilism.—Mr. R. C. Elmslie.—The patient, a girl, aged 15 years and 10 months, was said to have been healthy as a baby. At 1 year and 9 months she had diphtheria, and after this suffered from gastro-intestinal disturbances with recurrent attacks of diarrhœa until the age of thirteen. Since that time her general health had been much improved, and was now excellent. Her height was only 3 ft. The head measured 20 in. in circumference, the forehead being rather high and square. The spine was scoliotic, with right dorsal and left lumbar convexities. There was coxa vara deformity of both hips with limitation of abduction, a slight degree of genu valgum and anterior curvature of both tibiæ. X rays of the hips showed coxa vara of the rickety type, the whole neck of the femur being bent without alteration in position of the epiphysis. X rays of the wrists showed cupping of the ends of the diaphysis with widening of the epiphysial cartilages as in rickets; those of the tibiæ showed a general lightness of the bone with a very thin compact layer. Sexual development was absent, the breasts undeveloped, pubic hair absent and menstruation had not yet commenced. The urine contained a trace of albumin. So far there had been no opportunity of investigating the child's general metabolism. Two conditions were present, each of which was found associated with infantilism, namely albuminuria and the chronic intestinal trouble.

Abstracts from Current Literature.

Acute Infectious Diseases.

Leucocyte counts during influenza in infants and children (‘*Amer. Journ. Dis. Child.*,’ 1919, XVIII, *p.* 153).—**J. C. Montgomery** and **E. C. Dunham** made blood-studies in thirty cases of influenza in children aged from birth up to twelve years, and came to the following conclusions: (1) The tendency in uncomplicated influenza in infants and children is towards a leucopenia rather than a leucocytosis. (2) There is a tendency towards a slight leucocytosis in cases complicated by pneumonia. (3) In all the fatal pneumonia cases in their series the leucocyte counts were under 10,000. (4) The prognosis in general was better in pneumonia cases which showed leucocytosis. (5) Differential counts showed (*a*) a tremendous variation in the differential formula; (*b*) nothing sufficiently constant to be of much aid in diagnosis and prognosis.

J. D. Rolleston.

Influenzal croup (‘*Amer. Journ. Dis. Child.*,’ 1919, XVII, *p.* 377).—**J. C. Regan** and **C. Regan** state that influenzal croup is most frequent in children between the ages of three and ten, boys being more often affected than girls. The bacteria found are similar to those noted in general among influenza cases. In the nasopharynx there was a predominance of Pfeiffer's bacillus, pneumococcus and *Micrococcus catarrhalis*. In the cultures from the sputum, streptococci, pneumococci and Pfeiffer's bacillus were most common, with pneumococci and staphylococci in smaller numbers. In post-mortem cultures from the larynx and trachea staphylococci were most constant, Pfeiffer's bacillus and pneumococci being next in order of frequency. The symptoms of influenzal croup follow the attack of influenza after an interval of two to ten days and are similar to those of laryngeal diphtheria, the chief differences being as follows: In influenzal croup the tonsils and larynx are free of membrane, the mucous membrane of the throat having a deep red, dry, glistening appearance, unlike the more moist appearance common in diphtheria. The mucosa of the mouth is parched, and in the early stage the tongue is dry and feels hot to the touch. On auscultation numerous sibilant and sonorous *râles* are heard. The treatment found most effective by the writers was the use of steam inhalations carried out in a small room in which the saturation of the atmosphere with vapour could be carefully controlled. Poultices to the neck and morphia and atropine were also used. Intubation, which was tried in six cases, aggravated the condition, as the pressure of the tube increased the congestion in the mucous membrane and so added to the obstruction.

J. D. Rolleston.

Influenzal croup (‘*Amer. Journ. Dis. Child.*,’ 1919, XVIII, *p.* 238).—**H. L. Lynah** states that an occasional feature of influenzal croup is the absence of gradual progressive rhythmic inspiratory and expiratory dyspnœa which is frequently present in diphtheritic croup. A persistent recurrent glottic spasm is sometimes met with, which gives rise to a well-marked crowing sound, and if subglottic stenosis is present there is an expiratory croupy cough. The cough may be a combination of a whoop and a croup. Relief was afforded by epinephrin hypodermically.

J. D. ROLLESTON.

Post-influenzal encephalitis (*'Amer. Journ. Dis. Child.,'* 1919, XVIII, *p.* 83).—**H. Heiman**, who reports eight cases, distinguishes the following three main forms depending on the severity and most prominent symptoms: (1) Irritable, (2) lethargic, (3) lethargic with paralysis. The ages of the patients ranged from four months to thirteen and a-half years. Only one of the cases showed definite changes in the cerebro-spinal fluid—viz. a lymphocytosis. In two cases the children became imbeciles, and in three others the paralysis, though considerably improved, did not disappear.

J. D. ROLLESTON.

Diphtheria in the newborn (*'Med. Klinik,'* 1919, XV, *p.* 1192).—**F. Lonne** states that diphtheria is a relatively common occurrence among the newborn, though it is often not recognised as such owing to the frequent absence of symptoms. In the course of the last ten years Lonne observed 35 cases of nasal or umbilical diphtheria, or both combined, among newborn infants in the Göttingen University Obstetrical Department. Twenty showed clinical symptoms of diphtheria and 15 none at all; 3 cases, or 8·6 per cent., were fatal. The prognosis of diphtheria in the newborn is good except when complications occur, such as bronchitis, broncho-pneumonia, influenza, otitis or nutritional disturbance, when it is extremely unfavourable. Treatment consists in intramuscular injections of 2000 units of antitoxin and instillations of adrenalin in twice as much boracic lotion in nasal diphtheria, and the application of a mild disinfectant ointment when the umbilicus is affected.

J. D. ROLLESTON.

Diphtheria of the nose and ear in an infant, aged 30 days (*'La Pediatria,'* 1919, XXVII, *p.* 785.)—**L. Spolverini** reports a case of diphtheria of the nose and middle ear in an infant suffering from congenital syphilis. The nostrils were reddened, and there was a sanious nasal discharge. There was purulent discharge from the left ear. Diphtheria bacilli were found in the nasal discharge and in the pus from the ear in association with a few diplococci. Considerable improvement followed two injections of diphtheria antitoxin, the first consisting of 2000 units and the second of 1000 units, and syringing the nose and ear with a 1 per cent. solution of protargol. The child, however, was removed from hospital before complete recovery took place. Infection had probably been caused by a carrier, as there was no case of diphtheria in the family.

J. D. ROLLESTON.

Eosinophilous myocarditis in diphtheria (*'Journ. Amer. Med. Assoc.,'* 1919, LXXIII, *p.* 1925).—**F. Nuzum**, in sections from various parts of the auricles, ventricles and papillary muscles, found eosinophils in seven out of twenty-nine hearts of children who had died of diphtheria, but did not find them in the myocardium of patients who had died of various other diseases, such as scarlet fever, meningitis, poliomyelitis or measles. The myocardial eosinophilia appeared to have no relation to the severity of the clinical symptoms or to the degree of myocarditis or the amount of serum used. Nuzum regards the occurrence of eosinophilous myocarditis as due to a positive chemotaxis, some substance being present in the myocardium in response to which eosinophils migrate from the capillaries.

J. D. ROLLESTON.

Generalised diphtheritic polyneuritis without apparent diphtheria (*'Arch. Lat.-Amer. de Pediat.,'* 1919, XIII, *p.* 434).—**Ponce de Leon** records a case of generalised diphtheritic polyneuritis in a girl, aged 8 years. There was no history or evidence of diphtheria, but a throat culture showed the presence of diphtheria bacilli. Twenty c.c. of diphtheria antitoxin was injected and rapid recovery took place.

J. D. ROLLESTON.

The Schick reaction (*'Lancet,'* 1920, I, *p.* 192).—**H. M. Leete.**—0·2 cm. of diluted diphtheria antitoxin is injected intracutaneously. A positive reaction is shown within 24–48 hours by redness and infiltration, oval in outline, half an inch in diameter, thus indicating that the patient lacks natural antitoxin. In a negative test nothing is noted. A positive reaction leaves a pigmented and desquamating surface. There are also pseudo-reactions due to the proteins which are characterised by earlier development, infiltration, and by absence of the subsequent pigmentation. A control test should be tried on the other arm by heating the toxin to 75° C. for ten minutes, by which means the specific toxin is destroyed, leaving the proteins which cause the pseudo-reactions unchanged. A large proportion—37·2 per cent.—of 500 scarlet-fever patients were found to react positively, the positive reactions decreasing with advancing age; 110 cases which had received therapeutic antitoxin one to seventy days previously were tested and 109 were negative. Sixty-one of these, however, showed pseudo-reactions. Eleven of the 500 cases developed diphtheria, and of these 10 gave a positive result. Among 32 cases 18 were negative and 14 positive. No work was done in the immunisation of positive cases.

CHRISTOPHER ROLLESTON.

Jaundice at the onset of scarlet fever (*'Paris Med.,'* 1920, I, *p.* 63).—**Meurisse** records a case in a boy, aged 14 years, in whom the onset of scarlet fever was accompanied by well-marked obstructive jaundice of about a week's duration. The liver and gall-bladder were enlarged and tender. The fæces were pale and the urine contained bile-pigment. Meurisse attributes the condition to an angio-cholecystitis accompanied by an abundant exudation of mucus in the bile canaliculi. The rapidity of its development and the negative result of a blood-culture were against the jaundice being due to an ascending microbial infection.

J. D. ROLLESTON.

A case of scarlet fever with pneumonia as a complication (*'Med. Record,'* 1919, XCVI, *p.* 763).—**A. Lobell** records a case of lobar pneumonia which developed a fortnight after the onset of scarlet fever in a girl, aged 4 years. The disease was also complicated by suppurative otitis media and acute nephritis. Recovery took place. J. D. ROLLESTON.

Insusceptibility of man to inoculation with blood from measles patients (*'Bull. Johns Hopkins Hosp.,'* 1919, XXX, *p.* 257).—**A. W. Sellards** inoculated eight apparently susceptible individuals with measles blood in various ways, but none developed the disease. He points out that failure to transmit measles does not preclude the existence of the virus in the blood-stream even in moderate amount. Some evidence was obtained indicating the possibility of producing active immunity by injection of the patient's blood. J. D. ROLLESTON.

The reaction of monkeys to the inoculation of measles blood (*'Bull. Johns Hopkins Hosp.,'* 1919, XXX, *p.* 311).—**A. W. Sellards** refers to the previous paper by Wentworth and himself (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1919, XVI, *p.* 108), in which it was shown that the reactions following intensive inoculation of a small group of monkeys were too indefinite and inconstant to permit the practical use of monkeys in testing the blood of patients for the virus of measles. In the present paper he reports that he injected blood from two early cases of measles in the pre-eruptive stage subcutaneously and intra-peritoneally into two monkeys. One animal remained free from symptoms; the other developed a moderate leucopenia, and later a slight rash. A portion of the same specimen of measles blood was injected subcutaneously and intramuscularly into two susceptible human volunteers without any symptoms resulting. A specimen of blood from the monkey which subsequently developed a rash was injected into a susceptible volunteer but produced no symptoms. Normal serum injected into monkeys was followed by a very slight erythema appearing about eight to ten days after injection in four out of ten animals. The weight of evidence in the experiments was against the interpretation of symptoms in the monkey as representing a reaction to the virus of measles.

J. D. ROLLESTON.

Varicella and sunburn (*'Arch. de méd. des enf.,'* 1919, XXII, *p.* 657).—**P. Gautier** states that though the eruption of varicella is usually generalised, cases may occur in which the vesicles are found in greatest abundance in regions in which the skin has been irritated, *e.g.* by applications of iodine, scratching, flea-bites, eczema, etc. He records two cases in children, aged 3 and 8 years respectively, in whom the eruption appeared, if not exclusively, at all events with remarkable intensity, in the regions of the body (back and shoulders) which had been irritated by too long exposure to the sun's rays.

J. D. ROLLESTON.

Herpes zoster and varicella (*'Edin. Med. Journ.,'* 1919, II, *p.* 34).—**A. D. Fordyce.**—A boy, aged 16 years, developed herpes zoster, and fourteen days later his brother developed varicella. Three days later the characteristic rash of varicella began to appear in a baby sister, aged 1 year 11 months. So far as could be ascertained none of the three cases had been in contact with varicella.

J. ALLAN.

The transmission of smallpox infection to the fœtus (*'La Pediatria,'* 1919, XXVII, *p.* 193).—**S. Capellani** describes five cases which prove that the transmission of infective diseases from the mother to fœtus through the placenta is more common than is thought, and not only when the mother has actual morbid manifestation, but also in the incubation period, To the fœtus still *in utero* there may come from outside germs of infection through a healthy mother who may remain such, but without having any specific immunity against the germ which has passed through her organism in order to reach the product of conception.

VINCENT DICKINSON.

Purulent arthritis following smallpox and influenza (*'La Pediatria,'* 1919, XXVII, *p.* 655).—**R. Marinucci** describes two cases in which the joints contained a thick creamy pus, giving cultures of streptococci in the former and *B. pyocyaneus* in the latter. Both recovered completely after treatment by vaccines without damage to the articulations. In the first case both elbows, shoulders and knees were affected, in the second the shoulder only. VINCENT DICKINSON.

Fifty-one cases of pertussis treated with vaccines (*'Arch. of Ped.,'* 1919, XXXVI, *p.* 290).—**H. S. Reynolds** treated a series of 30 cases with unmixed Bordet-Gengou vaccine and 21 with a mixed vaccine, consisting of the Bordet-Gengou bacillus, *Streptococcus pyogenes, Staphylococcus pyogenes aureus, Micrococcus catarrhalis* and *B. influenzæ.* He found that the average duration of cases treated with the mixed vaccine was 47 days as compared with 62·5 days for those treated with the unmixed vaccine.
J. D. ROLLESTON.

Vaccine treatment of whooping-cough (*'Arch. of Ped.,'* 1919, XXXVI, *p.* 1).—**C. J. Bloom** uses a mixed vaccine containing the Bordet-Gengou bacillus, *Staphylococcus pyogenes aureus, Micrococcus catarrhalis, B. influenzæ* and *Streptococcus pyogenes.* He gives large doses, at least 5,000,000,000 bacteria at a time, and repeats this dose on alternate days until there is a marked remission of the symptoms. Usually four or five doses suffice. In some cases the vaccine is given every day. The following advantages are claimed for the treatment: (1) It minimises loss in weight; (2) it reduces the duration of the disease; (3) it decreases the intensity of the illness; (4) it foreshadows the possibilities of complications and sequelæ; (5) it is unattended by danger of anaphylaxis; (6) it limits the mortality.
J. D. ROLLESTON.

The bacteriology of mumps (*'Amer. Journ. Med. Sci.,'* 1919, CLVIII, *p.* 698.)—**R. L. Horden** records five cases of mumps in soldiers in which a Gram-positive diplococcus was isolated from the spinal fluid, the blood and a lymph-gland. The injection of the organism into the testicle of a rabbit produced severe orchitis in ten days. Horden concludes that mumps is probably caused by a Gram-positive diplococcus, and not by a filterable virus according to the view recently prevalent (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1919, XVI, *p.* 110). J. D. ROLLESTON.

Cerebral complications in mumps (*'Amer. Journ. Dis. Child.,'* 1919, XVIII, *p.* 187).—**H. R. Casparis** considers that there is an involvement of the encephalon as well as of the meninges rather than an involvement of the meninges alone in the cerebral complications of mumps. He records two cases in boys, aged 7 and 8½ years respectively, in whom the cerebral symptoms preceded the appearance of the parotid swelling by three to four days, and consisted of headache, delirium, vomiting, convulsions and *tache cérébrale.* Lumbar puncture in both cases yielded a clear sterile fluid under increased pressure, showing lymphocytosis. The symptoms disappeared in a few days, but the cerebro-spinal fluid did not become normal till the thirty-sixth and forty-first days respectively. J. D. ROLLESTON.

Cerebro-spinal fever in infants (*'Lancet,'* 1920, I, *p.* 238).—**Helen Mackay** describes eight cases, all of whom recovered under repeated punctures, followed by intrathecal injection of Lister Institute polyvalent antimeningococcal serum. The serum was continued until negative films and growths were obtained and the punctures continued until a normal pressure was registered. Case 1, aged 2 years and 9 months, was punctured twenty times, and had seven doses of serum, followed by an autogenous vaccine.

On admission he was unconscious and generally rigid. He was in hospital for forty-three days, and on discharge was stone deaf, stuporous, and unable to sit up. Two years later he was examined and found to suffer from complete nerve-deafness, but was intelligent and well developed and able to talk, although in most cases of this age of acquired nerve-deafness complete mutism results. Case 2 was absolutely unconscious and rigid on admission, with extreme retraction and flexion of all four limbs. Seven lumbar punctures were followed by intrathecal injections of serum. Subsequently the tappings were dry and adhesions were diagnosed. The occiput now touched the back, swallowing was difficult and nasal feeding was adopted for six weeks. The loss of weight was extreme. Subsequently he developed into an intelligent and well-developed child. He was 8 months old when admitted to hospital. Case 3, aged 4 years, was characterised by extreme rigidity and retraction and did not begin to improve till the eighty-fifth day. Nasal feeding was employed for forty-five days. There was incessant twitching of the right side of the face and of the right arm. The hair on the trunk and limbs took on rapid growth, and he became very stout from the chronic meningitis affecting the posterior lobe of the pituitary body. He was rickety on admission, but two years later the curvature of the legs was more marked and he was found to be backward but intelligent. Case 4 was characterised by hydrocephalus, which was relieved by twenty-one ventricular punctures and by a chronic turbid infusion into the knee-joint. The latter was cured by two aspirations. She had bad rickets subsequently and was mentally backward. The case is of interest, for recovery is rare after ventricular puncture, and the joints of the hands and the feet are those usually attacked. Case 6, an infant, aged 6 months, was admitted in the premeningitic stage, but the disease was not diagnosed until the eleventh day, when rigidity first appeared. There was no obvious increase of intracranial pressure. The serum was of no use, and improvement set in just before stock vaccines were administered and was rapid and complete. To sum up, five of the cases are healthy, well-developed children and three are backward. CHRISTOPHER ROLLESTON.

The causes of a sporadic case of cerebro-spinal meningitis (*'Amer. Journ. Dis. Child.,'* 1919, XVIII, *p.* 101).—**H. L. K. Shaw** records an apparently sporadic case in a five months old breast-fed baby in which the source of infection was found to be a healthy carrier. Shaw concludes that sporadic cases are in reality untraced cases, and that the human carrier is responsible for cases appearing either singly or in epidemics.

J. D. ROLLESTON.

The specific treatment of epidemic meningitis (*'Arch. de méd. des enf.,'* 1919, XXII, *p.* 618).—**K. Lewkowicz** regards the lateral ventricles as the principal site of the infection in cerebro-spinal meningitis, and therefore recommends that the injections of serum should be made directly into the ventricles. An injection of 10–20 c.c. should be made into both ventricles every three days. As a general rule the ordinary anti-meningococcal serum should not be given beyond the second week dating from the first injection. Vaccine treatment is indicated from the first in addition to serum-therapy. The value of vaccine treatment is seen principally in severe cases which show no tendency to spontaneous recovery. Lewkowicz reports a series of 22 cases, ten of which were in children, aged from 5 to 11 years, and twelve in adults treated by intra-ventricular injections of serum.

J. D. ROLLESTON.

Typhoid fever in the infant (*'Arch. des mal. des enf.,'* 1919, XXII, *p.* 183).—**J. Crespin** and **B. Saracino,** of Algiers, state that typhoid fever is by no means exceptional in the infant. Many cases which at first sight appeared to be examples of ordinary gastro-enteritis proved to be typhoid fever on more careful examination. From January, 1915, to January, 1918, the writers observed 42 cases in infants, 36 of which were typhoid and 6 paratyphoid. With two exceptions, in which the mothers were suffering from the disease and nursing their children, all the patients had been artificially fed, so that they had probably been infected by water. In only 18 of the 42 cases had the previous health been good, most of the other infants being atrophic, rickety, tuberculous or syphilitic. The time of the year in which most of the cases occurred was the summer and autumn, especially the month of September. As regards the age of the patient, the younger the child the rarer the disease: only one case occurred at the age of two months, and another at three months; between three and twelve months there were 6 cases of typhoid and one of paratyphoid A. The symptomatology usually is very incomplete. As a rule it is the digestive disturbances which attract attention, the clinical picture being that of an ordinary gastro-enteritis. The mode of onset in most cases was indefinite. The duration of the disease was usually fairly short, not exceeding twenty to thirty days as a rule. The temperature generally fell by lysis. Convalescence was often protracted, being associated with persistent digestive disturbances, anorexia and loss of flesh. Rose-spots were uncommon, being found in only 6 cases—5 of typhoid and 1 of paratyphoid B. The pulse was usually quick, and corresponded to the temperature; the dissociation between the two characteristics of the disease in the adult was hardly ever observed in the infant. Enlargement of the spleen was of less diagnostic value than in temperate climates, owing to the frequency of malaria in infants. More or less intense nervous disturbances in some amounting to a meningeal syndrome were observed in 12 cases. Death occurred in 6 out of 36 cases, or in about 16 per cent. Treatment should be as simple as possible. The writers derived excellent results from warm baths and washing out the bowel with potassium permanganate if the stools contained mucus and blood. Milk as a rule was well tolerated, contrary to what occurs in ordinary enteritis. J. D. ROLLESTON.

The bacteriology and vaccino-therapy of infantile dysentery (*'La Pediatria,'* 1919, XXVII, *p.* 550).—**F. P. Borrello** records twenty-four cases which show that infantile dysentery is a relatively frequent affection occurring sporadically and epidemically. The epidemics coincide with those of the adult and the infection may attack the child at any period of life, being more dangerous the younger the infant, and especially when it occurs during other infections, such as influenza, measles or leishmaniosis. The germs isolated belonged to both the Shiga and Flexner type, the former being more frequent, especially in epidemics. A rigorous technique rendered the isolation of the germs relatively easy. A certain degree of leucocytosis was present, both in primary and secondary infections. Marked changes in the hæmoglobin content were not noticed nor in the number of red cells even when the disease lasted over a long period. Neither were there any appreciable modifications in the leucocytic formula. The highest mortality was in Shiga forms, on account of grave toxic disturbances which chiefly affected the myocardium. Flexner forms might also prove fatal, especially in secondary infections; in primary forms the number was too small to draw any definite conclusion. In Shiga forms the adynamic, the hyperpyretic and the meningeal (convulsive) were well established, hæmorrhagic forms being infrequent. Treatment consisted chiefly of vaccine therapy, the success of which was in direct relation to its early employment; its importance was incontestable in Shiga forms, which were always fatal if treated symptomatically only. Symptomatic treatment and suitable diet, however, were not lacking in efficacy. VINCENT DICKINSON.

Generalised pyocyaneus infection in infancy ('*La Pediatria,*' 1919 XXVIII, *p.* 503).—**A. F. Canelli** states that most cases of *pyocyaneus* infection on record refer to the localisation of the bacillus in special organs such as the mouth, pharynx, trachea, intestine, skin, etc., where the presence of the organism may be physiological, and it is exceptional to meet with cases of generalised infection either in adults or children. Canelli records two fatal cases of this kind in a brother and sister aged 2½ months and 14 months respectively. In both cases the disease ran a rapid course. In the older child, who was the subject of chronic enteritis, the origin of infection was probably a boil on the neck. Death was preceded by the development of numerous petechiæ and blood-stained stools. Cultures of the blood and spleen showed the presence of *B. pyocyaneus*. In the younger child, who was most probably infected by his sister, the portal of entry of infection being either the intestine or bladder, death took place from acute meningitis, and *B. pyocyaneus* was cultivated from the meningeal exudate, spleen, heart-blood, urine and fæces. J. D. ROLLESTON.

Acute febrile disease in industrial schools ('*Glasg. Med. Journ.,*' 1918, II, *p.* 84).—**A. Maclean** refers to outbreaks of acute febrile disease which occurred in one industrial home for boys in Glasgow and in two industrial schools and a public school in Lanarkshire. Three types of the disease may be recognised:—(1) The mild non-pulmonary type (usual type), in which the onset is sudden, headache and prostration being the chief symptoms. There is feverishness, the temperature varying from 99° F. to 103° F. Recovery is rapid. Less frequent symptoms are nausea and vomiting. Sore throat is a rare complaint. (2) The malignant type in which the onset is sudden, coma, varying occasionally with delirium, rapidly supervenes, and death takes place frequently in less than twenty-four hours. (3) The pulmonary type in which the symptoms are similar to those of the first type, but symptoms of pulmonary involvement, with breathlessness and sometimes cyanosis, are superadded. Congestion, œdema, or consolidation of the bases of one or both lungs may occur. The absence of nervous symptoms, *e. g.* ptosis, Kernig's sign, strabismus, pupillary irregularity, etc., is a noteworthy characteristic. The pathology of the disease has not been completely established, but it may be noted that there is a resemblance to epidemic poliomyelitis. The bacteriology has not been completely investigated. The bacillus of influenza is invariably absent. A Gram-negative diplococcus resembling the pneumococcus has frequently been obtained from the nose, throat, lungs and membranes of the brain.

J. ALLAN.

Weiss's urochromogen reaction in infantile pathology ('*La Pediatria,*' 1919, XXVII, *p.* 139).—**U. Provinciali** finds that this reaction has no specific value for tuberculous processes nor for those of typhoid and paratyphoid. It occurs, although for the most part less intense and less frequently, also in healthy subjects and those suffering from other morbid processes, whether febrile or non-febrile, and hence does not constitute a new diagnostic substitute which could either conveniently or accurately compete with methods already known, such as the diazo reaction or von Pirquet's test. VINCENT DICKINSON.

The urochromogen reaction in different diseases of children (*'La Pediatria,'* 1919, XXVII, *p.* 625).—**O. Cozzolino.**—In 1917 De Silvestri advocated a new reaction discovered by him in the urine of typhoid patients as being of valuable diagnostic aid when it was impossible to carry out Widal's agglutinating test, the intradermo-reaction of Janeret or hæmoculture. By its simplicity it should be specially useful to practitioners in districts where laboratory help is unobtainable, for it consists merely in placing 2 c.c. of a solution of perchloride of iron in a test-tube, adding 4 or 5 drops of pure sulphuric acid, and then introducing drop by drop through a pipette the urine previously filtered down the side of the tube. A positive reaction consists in the formation of a brown ring at the junction of the fluids, and is stated to be found in 95 per cent. of cases of typhoid, while it is never present in the early stages of tuberculosis, influenza, rheumatism and other febrile conditions. The reaction is, moreover, weak, moderate or intense, the first variety occurring in paratyphoid A. Cozzolino examined the reaction in healthy children and in those suffering from broncho-pneumonia, 13 cases; tuberculous glands, 9 cases; tuberculous peritonitis, 3 cases; pulmonary tuberculosis, 8 cases; tuberculous meningitis, 2 cases; surgical tuberculosis, 7 cases; scrofula, 2 cases; pleurisy, 3 cases; empyema, 2 cases; acute enterocolitis, 5 cases; acute nephritis, 3 cases; whooping-cough, 3 cases; measles, 2 cases; acute osteo-myelitis, 1 case; mastoiditis, 1 case; catarrhal jaundice, 2 cases; varicella, 3 cases; infantile paralysis, 2 cases; acute bronchitis, 9 cases; acute rheumatism, 1 case; and cerebro-spinal meningitis, 1 case. His general conclusion was that while the reaction was for the most part negative in these diseases, it was occasionally positive in a weak or moderate degree in tuberculous meningitis, measles, mastoiditis, empyema and cerebro-spinal meningitis. In cases of typhoid and paratyphoid it was much more delicate than either Weiss's or Ehrlich's reaction, which were used as controls. VINCENT DICKINSON.

The elimination of acetone bodies during infectious fevers (*'Amer. Journ. Dis. Child.,'* 1920, XIX, *p.* 141).—**B. S. Veeder** and **M. R. Johnston,** as the result of observations on forty-one children with scarlet fever, diphtheria, measles and pneumonia, came to the conclusion that while an increased elimination of acetone bodies might occur in infectious disease, this did not invariably take place. In the same patient it might occur during one infection and not during a second. Acetonuria was not dependent on the severity of the infection or the degree of temperature, and its causation could not be explained by the decreased intake of food, which is so constantly associated with an infectious process. J. D. ROLLESTON.

Dermatology and Syphilis.

The histology and ætiology of erythema nodosum (*'La Pediatria,'* 1919, XXVII, *p.* 433).—**C. Pestalozza,** from his observations, is inclined to maintain the tubercular origin of this complaint. Histological researches, if they do not afford definite proof in favour of this theory, are not, however, opposed to it. He therefore asserts that the occurrence of erythema nodosum is merely the manifestation of a tuberculous condition already started, which may become latent and only show itself in a cuti-reaction. In answer to the query why erythema nodosum is rare while tuberculosis is common, he found in his clinic that out of 746 children definitely affected with some form of tuberculosis only 7, or 1·06 per cent., had erythema nodosum. If therefore tuberculosis is to be considered the ætiological factor in this affection, there must exist other determining causes which can provoke the outbreak of a typical erythematous eruption in a tuberculous subject. He considers that this factor, rather than being traumatic, is of the nature of a disturbance of circulation, either central (cardiac) or peripheral (thrombotic), and that arrest or retardation of the blood-stream at certain points might enable the tuberculous toxin to provoke the onset of the erythematous nodule. In support of this theory he recalls the fact that the eruption is more frequent in the decumbent parts of the body, in which these causes would more easily act. VINCENT DICKINSON.

Angiokeratoma ('*La Pediatria*,' 1919, xxvii, *p.* 637).—**A. F. Canelli** gives a full description of a case of this cutaneous affection which was first described by Mibelli in 1890, with photographic reproductions of the macroscopic and histological appearances. This disease has been defined as a dermatosis of infancy and childhood *par excellence*, and may have some causal relationship with chilblains and with the tuberculous diathesis. It is a local circumscribed affection attacking the distal parts of the body and in relation with vascular disturbance, either mechanical or neurotrophic. Epithelial proliferation is constant and characteristic, associated with hypertrophy of the horny layer and eventually of the granular and basal layers. Phenomena of atrophy and degeneration are secondary in relation with the marked compression that the hæmatic lacunæ exert on the various layers.
VINCENT DICKINSON.

Mongolian blue spots at São Paulo ('*Arch. de méd. des. enf.*,' 1919, xxii, *p.* 597).—**C. Ferreira.**—During 1918, 426 infants attended the Infants' Dispensary at São Paulo, Brazil; 390 were white, 27 mulattoes and 9 negroes. Mongolian blue spots were present in 2, or 0·5 per cent. of the whites, in 15, or 55 per cent. of the mulattoes, and in 8, or 88 per cent. of the negroes. The spots occurred in 4 cases in the lumbar region, in 3 in the sacral, in 7 in the sacro-coccygeal, in 1 in the coccygeal, in 4 in the inter-gluteal fold, in 3 on the right buttock, in 2 on the left buttock, and in 1 on different parts of the body. As compared with past years (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1919, xvi, *p.* 119), the percentage of spots was lower among the white infants, while in the negroes the proportion of spots was higher than before. In the mulattoes the proportion was about the same. The distribution was less varied than in 1917, and cases of multiple spots were infrequent. J. D. ROLLESTON.

The influence of acute infections on hereditary syphilis ('*Paris méd.*,' 1919, ii, *p.* 442).—**V. Hutinel** and **L. Nadal** report several cases to show how meningeal or cerebral manifestations, such as hemiplegia or hydrocephalus, may be produced in subjects of hereditary syphilis by the supervention of an acute infection such as measles, influenza or cerebrospinal meningitis. Epilepsy and chorea are also liable to develop in heredosyphilitic children as the result of an acute infection. Other syphilitic manifestations, such as nephritis, anæmia or bony lesions may develop from the same cause. J. D. ROLLESTON.

Congenital syphilis and rickets ('*La Pediatria,*' 1919, XXVII, *p.* 545).—**S. Cannata** states that from January, 1914, to June, 1919, out of nearly 10,000 infants examined at the Naples Pædiatric Clinique 1285 were suffering from rickets, and of these 478, or 37·27 per cent., were subjects of congenital syphilis, the existence of which was established by the history, clinical evidence, and Wassermann and luetin reactions. There were 58 cases of rickets within the first six months of life, for which all other causes but congenital syphilis could be excluded. Thirty-seven of the 58 cases showed the syndrome described by Marfan as characteristic of syphilitic rickets, viz. craniotabes, pronounced anæmia and enlargement of the spleen; but Cannata has found this syndrome in 18 cases of non-syphilitic rickety infants, and therefore concludes that it is not characteristic of syphilis. He believes that at present there is not sufficient evidence to show that there is a true syphilitic rickets in the sense that the rickets is of a syphilitic nature. It can only be conceded that infants with congenital syphilis frequently show signs of rickets during the first six months of life. He concludes that syphilitic infection either alone or in association with other factors is one of the chronic infections which most frequently favours the development of rickets. J. D. ROLLESTON.

Infantile scurvy associated with hereditary syphilis ('*Amer. Journ. Dis. Child.,*' 1919, XVII, *p.* 440).—**R. M. Greenthal** reports the case of a female infant, aged 3 months, in whom the presence of syphilis was shown by the family history, symptoms and positive Wassermann reaction in the child and parents, and the presence of scurvy by the changes in the bones and gums and striking response to the administration of orange-juice. Skiagrams showed a white line at the epiphysial margin, multiple fracture of the femurs and tibia just above the epiphyses and periosteal thickening of the shafts of the bones, especially of the femurs. J. D. ROLLESTON.

Atrophic cirrhosis of the liver in congenital syphilis ('*Arch. Lat.-Amer. de Pediat.,*' 1919, XIII, *p.* 413).—**L. Belloc** and **S. Satanowsky** report a fatal case in a female infant aged 5 months, which developed jaundice when forty days old. Considerable improvement took place under specific treatment, but two months later ascites supervened, and over a litre of reddish-yellow fluid was removed by paracentesis. Death took place five days later. The autopsy showed sclerosis and marked atrophy of the liver and sclerosis of the spleen and kidneys. All other causes of atrophic cirrhosis, especially alcoholism and tuberculosis, could be excluded. The rapid course of the disease, the age of the patient and the autopsy findings indicated that the syphilitic lesions in the liver had originated in intra-uterine life and reached their full development after birth. J. D. ROLLESTON.

Cerebro-spinal involvement in hereditary syphilis ('*Amer. Journ. Dis. Child.,*' 1919, XVIII, *p.* 173).—**P. C. Jeans** states that a review of the literature shows that in early acquired syphilis the cerebro-spinal fluid shows conspicuous changes in from 25 to 40 per cent. of the cases. Lumbar puncture was performed in 214 syphilitic children, 78 of whom were under 2 years, and 136 were aged from 2 to 14 years. The cerebrospinal fluid of 31 of the 78 infants gave a positive Wassermann reaction, and of these eleven had clinical symptoms of neuro-syphilis, chiefly of meningeal involvement. Of the 136 older children, 70 had a clinically active infection and 66 a latent infection. Of the former, 22, or 31 per cent., and of the latter

13, or 20 per cent., had a positive Wassermann reaction in the cerebro-spinal fluid. Thus 35, or 25·8 per cent. of the older children had positive cerebrospinal fluid reactions, and of these 35 patients 25 per cent. had symptoms or signs referable to the central nervous system. Of the entire group of 214 infants and children the nervous system was involved in 70, or 32·7 per cent. Jeans considers that the treatment of hereditary neurosyphilis need differ in no way from that of acquired neuro-syphilis, since it can be safely carried out with the same intensity in both instances.

J. D. ROLLESTON.

Wassermann's serodiagnosis in human milk ('*La Pediatria,*' 1919, XXVII, *p.* 343).—**C. Rusca** investigated the presence of syphilitic antibodies in milk, and found that (1) in cases of syphilis actually present or partially cured with early signs of it in the child the result was strongly positive; (2) in cured cases the result was generally negative coincidently with a positive Wassermann reaction in the blood, or showed simply an indication of inhibition of hæmolysis even though the reaction was positive in the blood; (3) in the milk serum of healthy women the result was never positive; (4) a permanent reaction was never seen in milk serum of women after cure when the reaction had disappeared from the blood; (5) there was no difference in behaviour of the reaction in primiparæ and multiparæ; (6) a partial inhibition of hæmolysis was seen in the colostrum serum of healthy women, using large doses (1 to 5 c.c.). This disappeared by the twentieth day—at latest in the second month in the subsequent milk serum.

VINCENT DICKINSON.

Reviews.

SYPHILIS IN CHILDHOOD. By LEONARD FINDLAY, M.D., D.Sc. London: Oxford University Press, 1919. Pp. 154, with 6 Coloured Plates and 37 figures. Price 8s. 6d. net.

In this little book Dr. Findlay gives an excellent account of the chief features of congenital syphilis, based largely on his own experience at the Glasgow Children's Hospital. In a new book on this subject the reviewer naturally turns to the author's views on the problems of transmission and immunity. Dr. Findlay holds that all mothers of syphilitic infants are themselves infected with latent syphilis. This view is based on the fact that the percentage of positive Wassermann reactions in these mothers is the same as that in cases of secondary syphilis, viz. about 95 per cent. To explain the frequent absence of symptoms in the mother, Dr. Findlay suggests that the source of infection is the uterus, which is an unsuitable soil for the growth of the spirochæte, and that the disease remains more or less latent. During pregnancy and the development of the fœtal tissues, which are good nutritive media, the spirochætes flourish and invade the placental tissues. In support of this view he quotes the work of Baisch and others who found spirochætes in the maternal portion of all placentas of 210 mothers of syphilitic offspring, but only 190 of these gave a positive Wassermann reaction. Dr. Findlay suggests that the rare exceptions to Colles' law may be instances of superinfection. Naturally he does not favour the possibility of pure paternal infection of the fœtus without the mother being infected. The instances reported by Hochsinger and others where a clinically healthy woman gave birth to syphilitic or non-syphilitic children according to whether she was impregnated by a syphilitic or non-syphilitic man, which support the theory of paternal transmission, are explained away by Dr. Findlay by assuming that the apparently non-syphilitic children would have given a positive Wassermann reaction. The problem of the mother's immunity or infection and the problem of paternal transmission cannot even now be regarded as finally settled. At any rate there is considerable clinical evidence to show that many mothers of syphilitic infants go through life without a sign of the disease. The problem, however, is one of academic rather than practical interest, for there is no doubt that the majority of such mothers are infected, and, even when apparently free, the mother of a syphilitic child should receive treatment on the occasion of a further pregnancy.

With regard to ante-natal treatment Dr. Findlay recommends treatment of the pregnant woman by intravenous injections of neosalvarsan combined with mercurial inunction, the latter being continued for some time after pregnancy. In seven cases thus treated a healthy child was obtained in all. As regards treatment of the syphilitic infant, he rightly regards inunction as the best method of administering mercury, and advises its continuance for two years. He, however, considers that the best curative effect is obtained by salvarsan combined with mercurial inunction. For salvarsan treatment he prefers the intravenous method—in infants through the veins of the scalp, in older children through the usual veins at the bend of the elbow.

Touching on the subject of marriage Dr. Findlay considers that a persistently negative reaction for a year after early and thorough treatment by salvarsan and mercury justifies us in giving sanction to marriage. This shortening of the period usually advised would appear to some of us to be unsafe.

The chapters dealing with diagnosis, symptomatology, etc., are clear and concise. There is one error, however, on p. 66, where it is stated that Dean (1910) was probably the first to suggest syphilis as a cause of spastic diplegia, or Little's disease. The syphilitic origin of this condition was upheld by French authors many years before this.

Dr. Findlay's book is well written and well illustrated and contains many original observations and notes of cases personally observed. We can recommend it as a reliable guide to a subject of far-reaching importance.

C. F. M.

LA MÉNINGITE TUBERCULEUSE DE L'ENFANT. By Dr. A. LESAGE. 8vo; pp. 194. Paris: Masson et Cie, 1919. Price 4 frs. 50.

THIS excellent but unassuming little volume is dedicated by Dr. Lesage to one of his pupils, Meaux Saint Marc, who was making a careful study of the subject with which it deals, and was killed at the front in August, 1914, while tending the wounded. Giving a brief historical account, Dr. Lesage mentions the writings of Whytt ('Observations on the Dropsy of the Brain,' 1768) and Rilliet and Barthez (1846) as of the chief importance in the development of correct views on the subject of tuberculous meningitis in the young. The observation of Trousseau (1841) that in infants the disease often takes the form of diarrhœa with wasting, but without the convulsions usually held to be characteristic of it, has often escaped notice; and the author lays particular stress on the frequency of tuberculous meningitis in infants, and the somnolent type often exhibited by the disease in the very young. Here it frequently escapes diagnosis because the pathological lesions of the meningitis are very slight—perhaps no more than an opalescence of the pia mater at the base of the brain between the branches of the optic chiasma, without any macroscopic miliary tubercles. Under the microscope, however, this part of the pia will show early tuberculous deposits and also tubercle bacilli. Later, of course, visible tubercles develop here and in the adjoining basal pia; but the earlier lesion described above Dr. Lesage believes to be often missed. Tuberculous meningitis is always secondary to tuberculous infection elsewhere in the body, and develops only if the infant or child has a special hereditary predisposition to that localisation of tuberculosis. Describing the semeiology, Dr. Lesage lays stress on the presence of deep, and later also superficial hyperæsthesia, the frequency of somnolent types of the disease in infants, the well-known variability of the clinical picture. The older the child, the more likely is he to react to the infection and develop convulsions, periods of excitement and the like before passing into a terminal coma. In the chapter on diagnosis a full account of "meningism" is given. In meningism there is a sudden outburst of symptoms and signs suggesting meningitis of one sort or another, of short course and variable intensity; recovery is invariable and the cerebro-spinal fluid is normal. The prognosis in tuberculous meningitis is practically hopeless, though long remissions may occur in its course. Dr. Lesage would accept as recoveries from it only those cases in which the presence of tubercle bacilli in the cerebro-spinal fluid has been proved by injection into healthy guinea-pigs, and the subsequent development of tuberculosis in them. As for treatment he can recommend none as being of the least use. It is clear that the author is a skilled clinical observer and has had a great experience in the care of infants and children with tuberculous meningitis. There is a certain artlessness about his book, and it may be strongly recommended to the attention of all medical men interested in the diseases of children. A. J. J.-B.

THE BLIND: THEIR CONDITION AND THE WORK BEING DONE FOR THEM IN THE UNITED STATES. By HARRY BEST, Ph.D. Pp. xviii + 763. New York: The Macmillan Company, 1919. Price $4.00.

THERE is no part of the work of the doctor, the educationalist and the social worker which is so difficult as that of work for the blind. The position of a number of people of varying ages and of different degrees of defect, whose loss has come on at different stages of their life and in vastly different modes, whose mental development varies widely often by very reason of the underlying condition which is primarily responsible for their blindness, all go to make up an exceedingly complex problem. Further, the number of the blind in relation to the general population is small, and they are scattered over the country so as to prevent any one person, except for those directly involved in the work of the blind, having any extensive experience of their needs or of their conditions. For these reasons a comprehensive work dealing with the conditions of the blind and the work being done for them in a great English-speaking country is of great value. The work presented by Dr. Best is one of unusual excellence. The detail with which the subject is examined, the care shown in the presentation of the facts, the wide range of his information and the style of his writing all go to make his book on the blind a veritable text-book to which everyone who has any interest in the blind must turn for comparative information. The fact that his work deals with the blind in the United States does not militate against its usefulness to workers in this country or in the dominions beyond the seas. The conditions producing blindness, the difficulties of the blind, and, above all, their economic disabilities are very much the same the civilised world over.

The days of the blind beggars are over: we now know that we cannot bring happiness to the afflicted by a casual charity. True charity requires the establishment of the disabled in some sphere where their capabilities may be developed to the highest level they can attain, so that the knowledge of their handicap may be mitigated by a realisation that they are useful members of society and capable of adding to the store of the world's useful work, and of maintaining that reasonable spirit of independence good work can alone secure.

The work is divided into a series of parts and chapters, each dealing with some definite aspect of the problem as it affects children, adults, and males and females. To each of these is appended a bibliography covering references to monographs published in the States, and in this and other countries. The work is therefore not only a mine of information as collected and set out by the author, but a first-rate starting-point for inquiry on any particular aspect of the problem. We commend this book without reserve to those interested in the blind. N. B. H.

CHILD WELFARE AND THE TEACHINGS OF CERTAIN DENTISTS, SCHOOL MEDICAL OFFICERS, MEDICAL OFFICERS OF HEALTH AND OTHER MEDICAL MEN.

By J. SIM WALLACE, D.Sc., M.D., L.D.S., formerly Dental Surgeon and Lecturer on Dental Surgery, London Hospital. London: Baillière, Tindall & Cox, 1919. Price 5s.

THIS forms a suitable sequel to the author's former work on 'Dental Diseases in Relation to Public Health.' The writer advocates the routine treatment of defective teeth at the earliest possible age. The correct management of the infant from birth until the age of two and a-half years constitutes the crux of the problem of how to prevent dental caries. Before the infant has cut any temporary teeth its diet ought to be mother's milk. Artificial substitutes are apt to prove detrimental to the developing teeth. Mouth-breathing affects adversely the form of the jaw, and this in turn influences the position of the teeth. In changing from milk to other foods at or about the ninth month, bread and crust with butter, or preferably toasted bread and butter, may be given as the first solid article of diet, provided it is not soaked in milk. Fruit-juice should be given long before solid food is introduced into the dietary in the case of bottle-fed infants.

Four meals a day suffice for an infant of about seventeen months. At the age of two and a-half years the writer only allows three meals—breakfast, luncheon and supper. Dr. Sim Wallace insists that dietetic principles underlie the prevention of dental caries, and that tooth-brushes and mouth-washes will effect but little without due regard being paid to those important principles. He therefore devotes several pages to a full consideration of these. In his chapter on the teaching of specialists he has an excellent "dig" at the physiologists, who, he rightly maintains, still continue to propound erroneous doctrines regarding oral hygiene and the physiology of mastication. He does not give us the reason, but we all know that the physiologist depends for the elaboration of his theories on purely experimental evidence and changes his views much as he changes his coat. Referring to the altogether erroneous idea that the saliva is a starch-digesting secretion the writer says that "if physiologists would look into the subject . . . they would confer an inestimable boon on the community, and we might even yet be able to look on some of them as benefactors of humanity, instead of, as at present, regarding them as the greatest culprits with regard to what has been called by one of them that curse of modern days."

This is an original book, as most of Dr. Sim Wallace's are. He strikes out quite a new line of thought in relation to child welfare, and what he has written should be studied carefully by everyone who has to deal with infants and children. The specialist with prejudiced views on infant-feeding may be not a little shocked at some of the author's statements, but they are founded on sound principles and cannot readily be gainsaid. This is a book which we most earnestly commend to the notice especially of those having charge of child-welfare clinics. J. B.

A Text-Book of Hygiene for Training Colleges. By Margaret Avery, B.Sc.Lond., M.R.S.I. Methuen & Co. Price 7s. 6d.

Miss Avery has written an interesting little work on public and personal hygiene. Unlike most sanitarians she frankly acknowledges the failure of our present health services to increase the efficiency of the population; in fact she confesses that the large number of lives saved by our expensive municipal services simply add to the ranks of those who absolutely refuse to support themselves, and the amount of able-bodied outdoor relief is as great as ever. A good account is given of eugenics, and it is contended that short sentences on habitual criminals should be avoided, thus preventing the propagation of a criminal class, as a large proportion of our convicts come from a feeble-minded and criminal stock. Marriage should be prevented among deaf-mutes, epileptics and the mentally defective. In her remarks on fatigue the authoress insists on its earlier incidence in highly strung emotional children. No work should be undertaken before breakfast and there should be frequent play intervals. Students will be glad to note a tabular statement on the time of acquisition of various faculties in infants—smiling at 6 weeks, anger at 10 weeks, and humour at 3 months. On the importance of 10 hours' sleep between the ages of 13 and 16 years much stress is laid. In the section devoted to common ailments several mistakes and omissions occur. Thus pulmonary tuberculosis is said to be *always* caused by the human type of the bacillus. Again, 1 in 200 children are said to suffer from tuberculosis of the lungs—an inaccurate statement even if mediastinal gland disease is included. The death-rate from phthisis is stated to be diminishing, whereas on the contrary since the interference of the State in this domain of medicine it has again been on the up grade. No mention is made of the tuberculous nature of phlyctenular conjunctivitis although open-air schooling is strongly advocated. Epileptics are advised to confine themselves to an exclusive milk diet—a misprint perhaps for a vegetarian *régime*. No doubt these statements will be modified in subsequent editions of this well-written and excellently produced handbook. C. R.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Thirtieth Session. Held at Lenox, Mass., May the 27th, 28th and 29th, 1918. Vol. XXX. Edited by OSCAR M. SCHLOSS, M.D. Pp. 331.

AMONG the thirty-eight papers here published, some contain valuable bibliographies, and others are of special interest on account of the rarity of the conditions described. The presidential address by Dr. La Fétra, of New York, deals with the "Neglected Period of Childhood," namely from two to six years of age. The period of infancy from birth to two years is fairly well looked after by infant milk stations or baby-feeding centres; and regular daily medical inspection at school covers the school age well. Wolbach and Morse record three cases of neuroblastoma sympathicum in an article well illustrated by microscopic figures and provided with select references. The essential diagnostic element in the tumour is the presence of fibrils, which represent the axis-cylinder processes. The structure of the metastases, as was shown by the liver in one case, may not prove the true nature of the growth. Kerley reports 26 cases of pyloric stenosis in private practice, treated by Rammstedt's operation, with 4 deaths—a mortality of 15·3 per cent. In the discussion on this paper, Dr. Emmett Holt stated that, out of 100 consecutive cases operated upon in hospital, the mortality among those that had vomited less than 4 weeks was 8·7 per cent., in contrast to 50 per cent. among those who had vomited more than 4 weeks. Dr. Carr publishes figures of microscopic sections of the colon in Hirschsprung's disease, showing tremendous increase in the width of the circular muscular coat from fibrosis and absence of the mucosa, its place being taken by vascular granulation-tissue. Dr. de Buys reports a case of *Balantidium coli* infection in a child, which, from his survey of the literature, appears to be the third on record; in a footnote he refers to a case in which emetine gave "spectacular results." Hess and Wager, by intravenous injection of the vesicles of chickenpox, obtained protection against the disease in 37 out of 38 cases, and they believe that the infection enters by way of the respiratory tract The first case of infantile kala-azar in America is reported by Talbot and Lyon, in a Greek girl, aged 6 years, who came to America when three years old; as the condition was regarded as aplastic splenic anæmia splenectomy was performed; *Leishmania infantum* were then found, and after intravenous injection of tartar emetic the child appeared to be cured. In his interesting paper on migraine in childhood, Dr. Wilder Tileston refers to free phenol in the urine, and insists on the beneficial effect of a restricted protein diet.

H. D. R.

THE UNITED STATES NAVAL MEDICAL BULLETIN: REPORT ON MEDICAL AND SURGICAL DEVELOPMENTS OF THE WAR. By T. WILLIAM SEAMAN BAINBRIDGE, Lieut.-Commander, M.C., U.S.N.R.F. Washington: Government Printing Office, 1919.

THE objects of this publication are best described in the "foreword":

"(1) To record the surgical lessons of the present war based on the experience of our Allies.

"(2) To secure anything likely to be of value to the U.S. Naval Medical School or helpful in the preparation of medical men for active service."

The book is a complete record of all the different methods of treatment for wounded men used during the war, with discussions and criticisms of the results obtained. It covers such varied subjects as the arrangement of camps, trench fever, conveyance of wounded men, anæsthesia, training of orderlies, re-education of disabled men, artificial legs and convalescent camps.

It is a most thorough and complete compilation, and does the greatest credit to those concerned in its formation. It is profusely and well illustrated, and cannot fail to be of the very greatest service both to the armies of the future, and to medical service in general.

One cannot close this review without congratulating the United States Government on their sound policy of publishing such a work, not only for the use of the Government departments concerned, but the world at large.

P. L. M.

NATIONAL HEALTH: FROM MAGIC, MYSTERY AND MEDICINE TO A NATIONAL HEALTH SERVICE. By FERDINAND REES, M.D., Hon. Physician, Royal Albert Edward Infirmary, Wigan. Bristol: John Wright & Sons, Ltd., 1919. Price 1s. 6d. net.

WHEN the author says that the general practitioner will doubtless in time become accustomed to dealing with such a public body as the Insurance Committee and cease to fear it, we feel that he possesses little knowledge of the real feelings of the general practitioner towards such "public bodies." Further, when he goes on to say (p. 45) that "without doubt the Insurance Committee is a fine institution; it sees that justice is done to both patient and doctor," we entirely disagree. The Insurance Act, in our opinion, has proved a curse. It has made many medical men mercenary rather than scientific, and it has ruined the health of the nation as a whole. The Prime Minister deplored the fact that we are largely a "C3 nation." If we are, the fault lies at his own door. The object of this book is to give an "all-hail" to the Ministry of Health. Meantime, we are not over-sanguine regarding it. All the same, Dr. Rees' book is well written, and, although personally we disagree with most of its dicta, we can recommend its perusal to our readers.

J. B.

STUDIES IN MENTAL INEFFICIENCY. Issued by The Central Association for the Care of the Mentally Defective (Incorporated), Queen Anne's Chambers, Tothill Street, S.W. 1, January the 15th, 1920. Vol. i, No. i. Price 9d. net.

THIS is a new issue, and should each month bring a valuable contribution to the literature on mental deficiency, coming as it does with the weight of the C.A.M.D. behind it.

This number contains a brief introduction to the history of the subject by Dr. G. E. Shuttleworth.

It also contains an excellent article by Dr. A. F. Tredgold on moral defectives, in which article he points out how very great is the importance of dealing with this class and how difficult is the problem; he shows that there are two types:

(1) Those who are mentally defective as this term is ordinarily understood.

(2) Those who are not mentally deficient within the ordinary conception of the term.

He also emphasises the lifelong nature of the defect, and states that in true cases the criminal propensities must be "undeterred by punishment."

Miss Lucy Fildes makes a strong case for individual studies and the lessons that can be learnt from them.

There are also short reports on the various activities going on in the way of institutions, legislation and literature.

A journal backed by such authority as this one is should certainly be in the hands of those who are interested in the study of the subject.

C. P. L.

DISEASES OF THE THROAT, NOSE AND EAR: FOR PRACTITIONERS. By W. G. PORTER, M.B., B.Sc., F.R.C.S.Edin. Third edition. Fully revised under the Editorship of A. LOGAN TURNER, M.D.Edin., F.R.C.S. Edin. With a photogravure portrait of Major Porter and 79 illustrations, 44 of which are in colours. Bristol: John Wright and Sons, Ltd. 1919. Price 12s. 6d. net.

WE welcome the third edition of this text-book, which first appeared in 1912 (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 144). Major Porter was killed in action in June, 1917, and the present edition has been brought up to date by his colleagues in Edinburgh. In the chapters dealing with the examination of the ear the original text has been altered and enlarged by Dr. J. Milne Dickie, especially in connection with the vestibular tests. The sections dealing with suppuration in the labyrinth and the causes of nerve-deafness have been re-arranged and amplified by Dr. J. S. Fraser, who has also revised the chapter on chronic catarrhal deafness and otosclerosis. The chapters on the pharynx and naso-pharynx have been revised by Dr. Douglas Guthrie and those on the nose by Dr. W. T. Gardiner. The Editor is responsible for the section devoted to diseases of the larynx and the chapter on the nasal accessory sinuses. J. D. R.

OTO-RHINO-LARYNGOLOGY FOR THE STUDENT AND PRACTITIONER. By Dr. GEORGES LAURENS. Translated by H. CLAYTON FOX, F.R.C.S.I. Bristol: John Wright & Sons, Ltd., 1919. Pp. x + 339; 592 illustrations. Price 17s. 6d. net.

THE great feature of this volume lies in its attention to detail—a point which is often forgotten by the writers of English and American text-books. Even to the smallest procedure, such as making a wool mop, this application of detail is carried out, and, lest verbal description should be inadequate, it is assisted by illustrations of remarkable clearness. This makes Dr. Georges Laurens's work particularly adapted to students and practitioners, to whom we would recommend it most cordially. So far as our examination of the book goes, there is nothing that the general practitioner may be directed to carry out by the consultant which the former will not find fully described.

The translator has done his work well, and we have nothing but praise for the production. M. Y.

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Original Articles.

STIGMATA OF PREDISPOSITION TO BONE AND JOINT TUBERCLE.

By W. C. Rivers, M.R.C.S., D.P.H.,
Tuberculosis Officer, Barnsley District, West Riding, Yorks.

I.—HISTORICAL.

The records of osseous and articular tuberculosis are as old as those of consumption, for spinal caries was described by Hippocrates in the 'De Articulis.' But they are nothing like so complete, because, from the nature of these affections, no reliable diagnosis was possible until a developed science of anatomy existed. The term "white swelling" was introduced by Wiseman in the seventeenth century; and it was after, not before, his time that rheumatic was separated from tuberculous arthritis. Men then soon noted the extrinsic contributory causes—bad hygiene and the like. And they went on speculating as to a *dyscrasia*—a peculiarity of constitution, a mysterious internal essential cause, co-operating with an external noxa to produce the tubercles. This speculation has not, as one says, had much luck; for now the external noxa is identified and isolated, we find we can infect with it the most healthy, refractory animal. Nevertheless the tradition of the older writers is continued. Within the last thirty years a scrofulous "exudative diathesis" has been described, by no writer very differently than as a constitutional anomaly facilitating infection by micro-organisms, especially tubercle bacilli. How Molière would have relished that definition! Quite justified is the comment of a bacteriologist (Cornet) that such scrofulous predisposition is nothing but scrofula itself.

Yet there may be some degree of dyscrasia after all: experimental evidence only makes it unlikely; does not (lacking correspondence with natural conditions of infection) disprove it. There lacks evidence for it as yet, however, while there does exist neglected evidence for our present subject—definite personal characteristics found more frequently in the subjects of bone and joint tubercle* than in the non-tuberculous, inexplicable as the result of tuberculosis, and pointing to innate predisposition. The first mention of such seems to come from Thomas White (1):

"Persons of red or light coloured hair are said to be peculiarly subject to this disease; but that this complaint is not confined to the colour of the hair, or the complexion, is evident from the numbers of people that have dark hair and similar complexions being very frequently strumous."

Could he have foreseen his subsequent independent confirmers, White might have spoken more confidently. Andral (2) wrote on those predisposed to tubercle:

"The colouring matter thus deficient in their skin is likewise so in their eyes, which retain the blue tint of infancy, and in their hair, which is light coloured, and also small in quantity. Their muscles are soft and slender, and show little contractile power; their blood is serous, and deficient in fibrine and colouring matter; and among their secretions the mucous predominate. In these individuals, lastly, sanguineous congestions are formed with remarkable facility in various parts of the skin and mucous membranes; and when once formed, never terminate, but continue in the chronic state and are frequently succeeded by ulcerations. . . . It seems that such persons preserve in adult age several of the characters belonging to the age of childhood, considered in its healthy or morbid state: their organisation is in a manner arrested in its development. Such a constitution as this may have been formed without any external cause appearing to contribute to it. In other cases it appears to be acquired . . . thus, then, there are certain habits of body, certain constitutions, innate or acquired, that predispose to the development of tubercle; that is to say, it most frequently appears in those constitutions; and it is a remarkable fact that it is in such cases especially we observe this morbid production developing itself in several organs at once, both in old and young."

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* Other forms of surgical tuberculosis are not necessarily excluded; but it is logical to begin with one form and limit the inquiry to that at first.

Again, Hufeland (3), discussing the scrofulous, speaks of "Une tête de grande dimension, surtout dans sa partie occipitale . . . des cheveux blonds . . . des yeux bleus"; while Landouzy (4), the well-known Paris professor who died lately, retained to the end these his early views on predisposition:

"Je vous ai dit, par contre, que si la tuberculose ne trouve pas pareil terrain propice à son dévelloppement, il en est un autre sur lequel la tuberculose se dévelloppe avec une fréquence singulière et germe avec une facilité déplorable. Je fais allusion à ce que, au lit le malade, vous m'avez maintes fois entendu appeler, en manière d'abréviation, le *terrain vénitien.* [Elsewhere he explains that 'vénitien' refers to the Venetian beauties with reddish-coloured hair that Titian loved to paint.] Vous savez que j'entends par là le tempérament et la constitution de ces malades à peau fine, d'un blanc cireux, aux cheveux et aux poils roux, aux transpiration faciles et odorantes. Je vous ai montré quelle singulière prédisposition avaient ces malades pour la tuberculose. . . . Je vous ai dit que, depuis plusieurs années, je n'étais jamais passé à côté d'un malade roux sans m'enquérir de l'affection dont il était atteint, et que les quatre cinquièmes de ces vénitiens je les avais trouvés tuberculeux."

Shrubsall's (5) scientific work supplies a needed check upon these clinical *aperçus*; for it might be that sick children generally, not the surgical tuberculous ones alone, tended to be of fair or rufous complexion. However, in an examination of the hair colour in large numbers of children from the medical casualty departments of several London hospitals, contrasted with the same characters as noted in children in the schools and playgrounds of various quarters of the metropolis, care being taken to comprise the area of attraction of each of the hospitals under consideration, he found that although fair hair did indeed preponderate markedly in the hospital class, yet red hair appeared in about the normal proportion. Also in a discussion Shrubsall (6) said that although phthisical children were apt to be brunettes, yet in cases of joint or glandular tuberculosis fair traits dominated. There seems to be only one contradiction of the existence of this pigmentary stigma of predisposition (for the most hardened contagionist would hesitate to explain red hair as tuberculo-toxic), one in a text-book, not the result of a special investigation into the point. Biedert (7) wrote that according to most opinion, skin and hair colour have no influence in predisposition.

We need hardly appeal to the principle of the actual association of disease with pigmentary peculiarities, so well established is it. Darwin (8) has taken it as one of his examples of the power of selection in forming a domesticated breed. From facts collected by Heusinger, he says, it appears that white sheep or pigs are injured by certain plants, dark-coloured individuals escaping. Prof. Wyman told him that on asking some farmers in Virginia how it was that all their pigs were black, they said that the pigs ate the pink roots of *Lachnanthes*, which coloured their bones pink, and which caused the hoofs of all but the black varieties to drop off; and one of the "crackers" (*i. e.* Virginian settlers) added, "We select the black members of a litter for raising, as they alone have a good chance of living." In human subjects the association of myopia with brown eyes and like instances will readily occur to the mind. We pass to consideration of

PECULIARITIES OF THE SKIN.

(1) There is first a certain pallor—not that present in the developed disease but antecedent to it. Andral (*loc. cit.*) mentions an especial tendency for tubercle "to grow in those individuals whose skin is very fair, and, as it were, blanched, and without any trace of colouring matter in its capillaries." (This is exclusive of red patches over the malar bones.) Hufeland (*loc. cit.*) also speaks of "une peau blanche," and we have seen, too, Landouzy's mention of a waxy whiteness. This pallor might reasonably be ascribed to the depressing effect of latent or nascent tubercle not yet clinically evident, were it not for Beneke's work. Beneke (9), after laborious and minute measurements of 540 bodies and more, came to the following main conclusions:

"Im grossen ganzen lassen sich die Konstitutionsanomalien nach zwei ganz verschiedenen Richtungen trennen. Bei der einen gestaltet sich die Kombination der relativen Grössenverhältnisse der einzelnen anatomischen Apparate derart, dass die Leistungsfähigkeit und Leistung der ganzen Maschine hinter der Normalen Zurückbleibt; bei der anderen dass sie das mittlere Mass derselben überschreitet.

"Was die erste Kombination anbetrifft, so finden wir hier in den typischen Fällen: ein relativ kleines Herz, ein relativ enges arterielles Gefass-system, relativ grosse Lungen, eine relativ kleine Leber, einen relativ kurzen Dünndarm. Bei der entgegengesetzten Kombination dagegen: ein relativ grosses Herz, relativ weite arterielle Gefässe, relativ kleine Lungen, eine relativ grosse Leber und einen relativ langen Dünndarm von relativ grosser Kapazität.

"Auf den Grund und Boden der ersten Kombination entwickeln sich die sogenannten erethischen Formen des skrofulösen Krankseins, die Osteomyelitiden [tuberculous osteomyelitis is clearly meant: in the text strumous joint disease is mentioned also] des Kindesalters, die skrofulösen (käsigen) Lungenphthisen, die chronischen Anämien . . ."

This finding, of what might be called the low-powered and the high-powered types* of the human machine—the first characterised by small circulatory and alimentary apparatus but large lungs, being the one more liable to tuberculosis—is a working out of the conceptions of Rokitansky (10) and Virchow (11), which indeed had been hinted at by Galen (12) and considered by Laënnec (13), of a congenitally small heart and arterial system being common in consumptives. Naturally there were many (of lesser name, by the way) who urged the small heart was tuberculo-toxic; the small vessels they did not discuss. However, through the X ray, particularly by the method of Moritz (14), the congenital "Tropfenherz" of the phthisical has been verified, and is described in radiological text-books. It is therefore quite on the cards that Beneke may have been right in ascribing to the surgical tuberculous patient, too, a small heart, a narrow aorta, and deficient capillaries. If these anatomical characteristics are explained as the result, not the contributory cause, of the tuberculosis found with them, then in fairness the anatomical characteristics of the second type, the machine of high power and pressure, must be ascribed to the maladies found along with it. For Beneke goes on to say that with the opposite conditions—big heart, wide arteries, small lungs, big liver, long and capacious upper intestine—you get especially rickets, hyperplasia of connective tissue, corpulence, atheroma, psoriasis, carcinoma. Now who would care to maintain that any one of these six can modify body structure after such a fashion? At all events Beneke's results do go to explain the skin pallor of the predisposed that Andral and Hufeland speak of. This pallor may be akin to that of chlorosis. Virchow's memoir, already cited, has some well-reproduced illustrations of gross aberrancies in the circulatory system (for instance of the intercostal arteries) in chlorotics.

Again, Beneke implies, when he ascribes to the first type a subnormal functioning of the whole organism, a certain weakliness of constitution. This is consonant enough with several observations. Delpech (15) says of tuberculous caries:

"Cependant elle survient bien plus fréquemment dans les individus doués d'une constitution faible, ceux où les muscles sont peu prononcés, où le tissu cellulaire est abondant et mou . . ."

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* One is reminded of the world-wide experience of life assurance companies, that policy holders of subnormal weight die oftener than the average of phthisis, that the overweights die especially of apoplexy, and that the overweights as a class have little longevity.

Hufeland (16) gives advanced age of the parents, especially the father, at the time of procreation as a predisposing cause; while the well-known statistician Körösi (17) said that children born of mothers under the age of nineteen years showed an abnormally high mortality from scrofula and from congenital debility. Of course immaturity or advanced age of the parents is an acknowledged detriment to the offspring. There is also this strong general argument, that as tuberculosis is admittedly predisposed to by external depressing influences, deficient food, faulty hygiene, debilitating diseases, trauma and the like, it should in similar fashion be favoured by initially depressed health such as arises from a weakly constitution. Of such weakliness pallor will obviously be a possible sign.

(2) Cornet (18) advances as a predisposant to surgical tuberculosis increased access to external noxæ produced by heightened permeability arising chiefly from *thinness of the skin;* and Cornet was a bacteriologist of "strengster Kochscher Observanz," little likely to show needless favour to the endogenous factor in disease. Moreover there are good reasons for his view. Cornet showed that by rubbing in cultures tubercle bacilli could be made to traverse unbroken skin without leaving a trace of their passage through it, and to provoke reaction in the corresponding lymphatic glands. He pointed to the facts that surgical tuberculosis was commoner in children than in adults, and that children's skin was the thinner, and moreover kept on the stretch by their rapid growth; also commoner (allowing for their slighter exposure to trauma) in females than in males, the skin in the former case being again the thinner.* From these and other arguments, accessible in the source cited, he concluded that heightened permeability of the skin might well be an individual personal predisposing factor.

This is likely on many grounds, for in the subjects of surgical tubercle are often seen lesions which by animal inoculation and other tests seem due to pyogenic organisms, not to the bacillus of Koch. It is well known how, along with an unmistakeably tuberculous joint, for instance, one may find in quite another part of the body a collection of puriform matter (which collection behaves, however, like an ordinary cold abscess), which some call tuberculosis of the connective tissue, others pyogenic scrofulosis, because tubercle bacilli can often not be found in it. Ponfick was perhaps the first to point to this duality of scrofulous and strumous lesions, well expressed by Ziegler (19) in the following passage, although his catholicity may go too far in including syphilis:

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* A striking illustration of this is quoted from the time of the French Revolution. Human skin being then worked up in a leather factory, it was found that that of women was fit only for articles like braces.

" Untersucht man derartige Krankheitserscheinungen genauer, so findet man, dass meistens ätiologisch wohl bekannte Krankheiten, specifische Infectionen, unter dem angegeben Bilde verlaufen, und Zwar vornehmlich Infectionen mit Streptokokken, Staphylokokken, Tuberkelbacillen und Syphilisvirus. Die Scrofulose ist also keine besondere Krankheit, sondern nur eine besondere Erscheinungsform verschiedener Infectionen, und wenn man den Begriff der Scrofulose als Bezeichnung für einen besonderen pathologischen Zustand beibehalten will, so muss man ihn Soweit einschränken, dass man der Scrofulose nur eine besondere Disposition zu den genannten und auch zu anderen mit Entzündung und Drüsenschwellung verbundenen Infectionen zuerkennt."

Since, then, the vulnerability to scrofula does not concern only the tubercle bacillus, but also pus organisms, the probability of that vulnerability sometimes consisting in a highly permeable, thin skin is increased.

Cornet does not mention red hair in his inquiry into predisposition. It is possible, however, that part of the liability of red-haired individuals to surgical tubercle may be in consequence of greater permeability or thinness of their skin. As has been seen, Landouzy speaks of the "peau fine" of his Venetian type. A well-known anatomist is good enough to write that he is unaware of any investigation on this point having been made, "but there is a certain redness of hair always accompanied by a white and delicate skin—a skin which suggests a thyroid effect to me." A well-known dermatologist is likewise ignorant of any such work.

(3) *Ichthyosis.*—From the side of the tuberculosis workers references to the occurrence of ichthyosis amongst the subjects of surgical tubercle are scanty. Lebert (20) gives it passing mention amongst the many skin affections of scrofula, but apparently without regarding it as preceding the scrofula. I (21) found in a large number of consumptives ichthyosis present seven times as frequently as in a comparable control of normals; it long preceded the tuberculous lesion, as is indeed likely, ichthyosis usually dating from early infancy. I had likewise noticed ichthyosis common in surgical tubercle. The dermatologist Tommassolli (22) said that amongst males ichthyosis affected almost exclusively those who were originally feeble and of imperfect development; and that even when

ichthyotics seemed in possession of good general health, the disorder was nearly always accompanied by functional derangement of some organ or system, or else by very evident predisposition to a grave visceral affection, like tuberculosis. He also quoted from unspecified "reports of Vienna clinics," to the effect that ichthyosis ought really to be removed from the dermatological department to some other one, either because of tuberculosis—the most frequent complication—or heart disease, enlarged lymphatic glands, rickets, idiocy and so forth. Lastly, Du Mesnil (23) communicated two cases of coincidence of tuberculosis (one pulmonary, the other of the cervical lymphatic glands) with ichthyosis, and spoke of attenuated forms of the latter, consisting in xerodermia limited to the external surfaces of the arms and legs, which were to be observed in strumous subjects.

Now on several grounds there is strong *à priori* likelihood that ichthyosis should predispose to surgical tuberculosis. In the first place ichthyosis increases the permeability of the skin, weakens it as a barrier to infection, by reason of the eczema and chapping to which ichthyotics are very liable. The numerous tiny breaches of continuity thus produced must facilitate infection. Cornet (*loc. cit.* s. 121) found that in skin with no external injury a simple application of tubercle culture was without ill-effect. Even in a region like the penis a slight wound was necessary to infection. In his chapter on prophylaxis he advises that the small scratches children are apt to get on their fingers should be carefully cleansed and covered. Ponfick (24) said that the small rhagades inseparable from eczema must favour in a high degree the entry into the system of every kind of germ. Indeed it is supposed that in this way, partly, pyogenic scrofulosis leads on to tuberculous scrofulosis (in Landouzy's epigram, "Terrain scrofuleux, graine tuberculeuse"). Thus an ichthyotic skin, with its chapping and liability to small septic lesions, is in like case with one already infected with pyogenic scrofulosis.

A second ground of vulnerability to tubercle is that, as we have seen, according to some writers ichthyotics are of originally weak constitution.

Thirdly, it is well known that ichthyotics are subject to congenital defects and abnormalities, both internal and external. Now Cornet allows that congenital abnormalities of the lymphatic system—and, as he says, Virchow found them more abundant there than anywhere else—might greatly facilitate tuberculous infection. Again, as already mentioned, in the illustrative plates of the main arterial system of chlorotics and tuberculous patients, Virchow figures some surprising abnormalities in the intercostal arteries. It is quite possible that surgical tuberculous patients, who, according to Beneke, have a similar circulatory apparatus, may be over-liable to congenital defect. Very familiar is the frequency with which abdominal tuberculosis is met with in operations upon ovarian tumours,* or in hernial sacs. Hufeland (of Jena, p. 18) spoke of spina bifida as relatively frequent in scrofula. We think, too, of the liability to phthisis of idiots, lunatics, and the subjects of congenital heart malformation. Red hair is something of an anomaly—at all events in the Latin races, such as Landouzy's French patients. And the freckles which almost invariably accompany red hair are in essence a degenerative phenomenon. Freckles (syn. *Lentigo, Ephelis*) are, according to the best dermatological authority, which seems to follow Moritz Cohn (25), increased deposits of true melanin in a circumscribed portion of the basal layers of cells of the *rete Malpighii*, with a few pigment-granules in the papillary layer. According to Jamieson (26), a congenital disposition to their evolution must be supposed, and Hebra (27) said they occurred only in individuals with red or golden hair. This last refers however to large freckles, *lentigines*, as opposed to *ephelides*, the smaller kind; it is well known that the freckles of the red-haired are very large ones. The associations of marked freckling seem to be morbid—(*a*) malignancy, (*b*) nervous disease, (*c*) ill-health.

(*a*) In ordinary epithelial growth "the loss of the prickles is much more rapid and earlier, where pigment [of *nævi spili* or of *lentigines*] is present, so that some softening action on the epithelium, and especially on the epithelial fibrillation, can hardly be denied" (28).

Radcliffe-Crocker (29) says that pigmented moles sometimes commence apparently as lentigo, and subsequently become prominent and assume the mole character. Such a pigmented mole would appear to constitute, as it were, a sort of half-way house between freckles† and xerodermia pigmentosum—a grave degenerative skin disease, of which freckles are a feature and which goes on to atrophy, telangiectases, warts and cancers.

(*b*) As regards the association with nervous disease, Radcliffe-Crocker has an instructive paragraph (*loc. cit.*, p. 608):

"Lentiginous pigmentation is sometimes unilateral. Such a case is depicted in my atlas. . . . Robinson, Fordyce, Fox and Bronson of New York have had similar cases, and one was published by Féré in France." From a footnote and from further information we gather that both Bronson's and Fordyce's cases had infantile paralysis, while Féré's was an epileptic.

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* See, for instance, Osler's well-known text-book, 6th ed., p. 310.

† The distinction between lentigo and ephelis made above by Hebra would seem to be rather academic. It is certainly not adhered to by most dermatologists.

(*c*) *Ill-health.*—The same authority (p. 609) writes that defective nutrition is a cause of symptomatic lentigo, which is seen in association with anæmia, constipation, and lesions of the abdominal viscera. Lastly, it is a familiar fact that light-haired persons and red-haired persons do not bronze with sunlight; they "burn" red or freckle. Hebra (*loc. cit.*, p. 13) considers that failure to bronze with sunlight is a sign of ill-health. "It is well known that many individuals can be exposed to the greatest heat of the sun without becoming bronzed, or at least markedly so, but retain their pale complexions. This applies to chlorotic and tubercular subjects. [A significant conjunction, in view of Virchow's and Beneke's similar one on other grounds.] On the contrary, these same individuals become bronzed so soon as they are exposed to the above-named external influences if, in the course of time, they recover from their constitutional affection. It is frequently said in ordinary modes of speech, 'I easily become bronzed,' or, 'I become bronzed with difficulty.' The scientific comment on this mode of speech would be—'Healthy people bronze easily, sick people only with difficulty, and slightly.'"

It is possible, however, in view of modern work on pigmentation in tuberculosis, that there are other explanations. Besides, as already mentioned, we know that there are quite healthy persons who never bronze with sunlight, who are commonly of blonde complexion or red-haired. Now, it is a fact that such non-bronzing blondes are disliked as patients by most surgical tuberculosis specialists. Most, not all. Oehlecker (30), for instance, denied that patients who pigmented well did any better than the average. But general opinion is the other way, and indeed one theory (31) of the benefit of heliotherapy is that skin-pigment and its derivatives are carried off in a dissolved condition, gain the blood- and lymph-streams, and thus arrive at the confines, at any rate, of the tuberculous focus, upon which they have specific effect. A skin poorly or abnormally pigmented, then, should, on this showing, be *à priori* a likely component in predisposition to surgical tubercle.

So much for peculiarities of the skin in surgical tubercle, in the case of all of which probability certainly inclines to the side of their being autochthonous, not tuberculo-toxic or otherwise acquired.

NON-TUBERCULOUS NASAL AFFECTIONS.

There are two of these eminently characteristic of scrofula and surgical tubercle—chronic catarrhal rhinitis and ozæna.

The former, known by the classical symptoms of stuffiness, increased secretion, eczema introitus narium, thick upper lip, swollen tip of the nose, occurs especially in connection with scrofula proper,* that is, with enlarged cervical glands and ocular phlyctenules. But in a milder form it is common enough in bone and joint tuberculosis also; and this chronic rhinitis has been put down, reasonably enough, as a nasal manifestation of pyogenic scrofulosis, of that chronic infection with pus organisms which often precedes the tuberculous infection.

The latter, ozæna, was formerly reckoned as a nasal manifestation of tubercle—as a tuberculous lesion—when occurring in connection with tuberculosis elsewhere; although now the general opinion goes that it precedes the tubercle and predisposes to it.

The consideration of most of these points will be taken up in the next number, when we compare children suffering from bone and joint tuberculosis with normal children.

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* Needless to say, the Continental term "scrofulosis" (or at all events tuberculous or mixed scrofulosis) embraces all varieties of what Anglo-Saxon workers understand by surgical tubercle, *e.g.* bone scrofulosis, lymphatic gland scrofulosis, etc.

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TRAUMATIC STRICTURE OF THE URETHRA IN CHILDREN AND YOUNG SUBJECTS, WITH SOME REMARKS CONCERNING THE IMMEDIATE TREATMENT OF RUPTURED URETHRA.

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In the following paper I propose to consider a few practical points in so far as they affect the very important injury, occurring so very frequently in young subjects, which is known as rupture of the urethra, and which if treated inadequately may, and probably will, lead to a traumatic stricture, which, as is well known, has very disastrous results for the patient.

Three typical cases will first be considered as regards the history of the accident, and a short account of the treatment which should be adopted immediately by the practitioner.

Case 1.—S. S—, aged 8 years, in 1912 was climbing on a building in order to fetch a cricket-ball when he slipped and fell astride a dustbin. For some reason after the accident he went into a lavatory and tried to pass water, but found he could not. He did not suffer from faintness, and, in fact, managed to walk home. The day after the accident—the patient not having passed water—the penis and adjacent parts became much swollen. After having been seen by two medical men he was taken to an infirmary, where a catheter was passed through the urethra and secured in position. He was eventually discharged as incurable and was admitted to hospital, when apparently the same pessimistic view was taken as regards the prognosis. He was then admitted under my care into the Victoria Hospital for Children.

There was a stricture 5 in. from the meatus and situated in relation to the posterior part of the spongy urethra. Only a small instrument could be passed through it. Perinæal section was performed and the stricture divided along its length—it was about ¾ in. long. Perinæal drainage was carried out for some time, and, eventually a No. 8 English catheter could be passed easily. He continued to attend my out-patient department at Guy's Hospital, and up to quite recently has had a good stream of urine and an instrument of moderate size could be easily passed. He now (May, 1920) has still a good stream of urine, but, using reasonable means at out-patients', I cannot pass an instrument through the stricture.

Case 2.—S. C—, aged 16 years, suffering from congenital syphilis, was referred to me by my friend, Mr. C. H. Mills, from St. Paul's Hospital, which at that time was so full that the patient could not be admitted. The history, as given by the patient, states that he fell across a paling. He was taken to an infirmary and was operated upon immediately on admission. Apparently a perinæal section was performed. He was in the infirmary for eight weeks. The urine was passed very slowly. At the end of twelve months he attended at St. Paul's Hospital, and, as stated, was sent on from there to Guy's Hospital. On admission to Guy's Hospital he was suffering from a good deal of pain, due to a distended bladder, and had incontinence of urine. A moderate-sized metal bougie was passed without any difficulty, and then a No. 7 English catheter. The bladder was washed out regularly, and the patient was discharged shortly with full control of his water and able to pass it well. The urine, which had been alkaline and turbid, became acid and clear. There is now no difficulty in passing a moderate-sized bougie, and no pain or tenderness is manifest during its passage.

Case 3.—E. T—, aged 15 years. Fell off a ladder astride the handle of a barrow on December the 15th, 1916. He was admitted to Guy's Hospital, where perinæal section was performed the following day. After discharge from hospital he was sent on to the Genito-urinary Out-patient Department, where he came under my care in

February, 1917. The wound had healed well, and practically there was no difficulty in passing an instrument of moderate size.

Patient is now (1920) attending the Genito-urinary Out-patient Department regularly once a week. He usually passes a No. 8 *coudé* catheter on himself quite easily, but if for any reason he fails I have no difficulty in passing a No. 14–18 (French size) metal bougie.

These cases have been selected from some eight or ten examples of ruptured or damaged urethra, and will form the text of the present paper.

There are certain diseased conditions peculiar to children, and, whilst they may not be so numerous, there are certain accidents which are peculiar to children. Of these accidents it may be said at once that no injury is at the same time so common and of such grave significance as that of rupture, partial or complete, of the male urethra in a young subject. The consideration of this important and grave injury may be divided into three fairly obvious parts, viz. (1) diagnosis, (2) prognosis, (3) treatment.

Diagnosis.—The diagnosis of ruptured urethra must not rest upon a hope that nothing serious has happened. The history of the accident, which can usually be supplied quite adequately by the patient, should point to the correct diagnosis, and it is never safe with a history of a fall upon the perinæum to neglect the probability of a rupture of the urethra.

Position of rupture.—This is stated to be situated usually in the region of the triangular ligamant or membranous part of the urethra; but it may occur in the spongy urethra in that position where the urethra was nipped between the force applied externally and the counter-force supplied by the front part of the pubic bone, and so a rupture of the urethra may occur further forward than that usually stated.

For an example of a case of stricture in the middle of the spongy portion of the urethra the following case may be cited: A boy, aged 8 or 9 years, fell from a pillar on to the pavement below with both his lower limbs strongly abducted—in such a way as to nip his penis between the pavement and the front part of the symphysis pubis. The penile urethra was ruptured from 2½ to 3 in. from the meatus—*i.e.* about the same distance in front of the membranous portion. He attended my out-patient department at the Victoria Hospital some time afterwards, when he showed a well-marked stricture in the region of rupture. At operation the stricture was found to be tight, quite short, and almost diaphragmatic, thus admitting of easy excision of the strictured area and suture of the divided ends of the urethra with a good result up to three years after the operation. I was unable to learn his subsequent history.

If, however, a rupture of the urethra is associated with a fracture of the pelvis it is situated as a rule in the membranous portion.

Just as a cystoscope may be used with great advantage in the diagnosis of a ruptured bladder and should be used as early as possible, so a urethroscope might be used profitably in diagnosing injury to the urethra, care being taken to remember that the very strictest asepsis must be ensured, especially if a fracture of the pelvis be associated with the damage to the urethra. The fracture of the pelvis is, then, really a compound fracture, and is subject to all the rules and principles of surgery as applied to compound fractures.

There may be escape of blood from the urethra, the bleeding being independent of any passage of urine.

Position of rupture relative to urethral lumen.—The rupture may be complete or incomplete. If incomplete it may be situated on the upper or under surface. This is very important, as if the urethral mucous membrane is not completely divided, and there is a strip of undivided mucosa in the region of the injury, the prognosis is much better than when complete rupture has taken place.

It can hardly be said that the prognosis of rupture of the urethra is really very grave as far as immediate symptoms go unless it be complicated with other injuries, such as fractured pelvis, but the remote prognosis is indeed serious. In one respect, however, immediate prognosis may be very grave. There may be extravasation of urine. I find as a practical fact that students are not very quick in discovering a perinæal swelling, and extravasation of urine may have advanced quite considerably before it is supposed to have occurred. In a case, therefore, of suspected rupture of the urethra careful attention must be directed to the occurrence or abeyance of micturition and the presence or formation of a swelling in the perinæum due to extravasation of urine. In a number of cases, of course, so-called extravasation of urine is a complete misnomer, the condition being one of acute perinæal cellulitis; but in these cases of ruptured urethra occurring in young subjects the swelling is due really to extravasation of urine, which in the type of cases under review may and probably will lead to septic changes of a most grave nature taking place, but symptoms of which may be quite late in appearance. This brings us at once to a consideration of the immediate treatment.

If the surgeon is lucky or particularly skilful in palpating the urethral passage with a soft instrument he may endeavour to pass such an instrument along the damaged urethra. As the late Mr. R. Clement Lucas was in the habit of teaching, a *coudé* catheter of moderate size should be passed with its point projecting on the dorsal surface of the urethra, as the damage, if only involving a part of the lumen of this tube, usually affects the ventral surface. If this fails the point may be directed regularly in all directions until, as it were, "the compass is boxed." If this "boxing of the compass" be performed carefully the catheter may be directed into the bladder. If the passage of the catheter is, however, not possible, the question arises as to what is to be done? Perinæal section naturally suggests itself, and for at least two reasons: first by performing a perinæal section the divided ends of the ruptured urethra may be found, or if incomplete, the exact nature of the damage may be ascertained; secondly, drainage of the bladder and drainage of the damaged tissue may be done through the same incision.

It would hardly appear possible that, the question of perinæal section being raised and its performance decided upon, any further discussion on the question could be initiated, but in certain cases extravasation of urine having taken place, and septic conditions in this way likely to occur, the question of an alternative or additional *suprapubic cystotomy* may have to be considered. One enormous advantage of suprapubic cystotomy lies in the fact that such a wound is not liable to accidental septic contamination from the rectum, and that, by its adoption, the bladder is not likely to become the seat of secondary infection.

The following method of procedure is what I would recommend. By all means let a perinæal incision be made in order that, if possible, the ends of the ruptured urethra may be exposed, refreshed and immediately sutured together, and any local extravasation or sepsis dealt with. A perinæal incision is also advisable in order that by its aid a catheter may be directed into that part of the urethra which lies proximal to the site of injury. But even with a perinæal wound the proximal portion of the urethra may not be at all easily discovered. Any unnecessary handling, bruising or cutting of the adjacent parts is strongly to be deprecated in the attempted discovery of this proximal portion of the urethra, and I do not hesitate to recommend that in such a case the bladder be not opened *viâ* the perinæum, but that the suprapubic route be adopted for entering the bladder.

In addition to the advantages claimed for this method of opening the bladder retrograde catheterism may be practised, and a catheter inserted through the urethra from the bladder end, thus greatly facilitating the passage of an instrument along the whole urethra. Retrograde catheterism is not at all easy in the adult, but can be quite simply performed in the young subject. If, then, there is any difficulty in dealing with the rupture of the urethra from the perinæum, there should be no hesitation on the part of the operator in performing a suprapubic cystotomy and a retrograde catheterisation, making the suprapubic wound the chief route for drainage of urine from the bladder, leaving our perinæal wound for the adequate drainage of the parts around the seat of injury. If immediate suture of the ruptured urethra is decided upon, suprapubic cystotomy is all the more necessary in order to keep the parts at rest which lie around the area of suture. Suprapubic cystotomy is not to be considered, therefore, as an alternative to perinæal incision, but as an additional and frequently very necessary treatment.

These remarks about ruptured urethra and its immediate diagnosis and treatment have been made as a knowledge of them may prevent the stricture being as bad in its results as it might otherwise be.

PROGNOSIS.

But there is a consideration which must be taken into account also in connection with the prognosis of traumatic stricture. We may ask ourselves the question: Why is the prognosis of traumatic stricture so grave? Why is it worse than a stricture which is due to gonorrhœa? as I consider it to be. [There are four cases of traumatic stricture between 1890 and 1910 in the Guy's Hospital post-mortem reports, the average age at death, which in every case was attributable directly to the stricture, being just over forty.] There are, in the writer's opinion, several reasons for this. In the first place a rupture of the urethra, even if incomplete, necessarily entails periurethral and extra-urethral damage, the whole corpus spongiosum may be ruptured transversely, and there is considerable bruising of the parts around and outside the urethral tube. The normal periurethral and extra-urethral tissue is replaced by fibrous tissue, and the consequent stricture, although it may be quite short, is very dense and thick as compared with a gonorrhœal stricture, which may be quite long but is rarely extra-urethral. Another reason for the grave prognosis as regards duration of life is this: The bladder, being that of a young subject, is capable of hypertrophying to a considerable extent, and does not fail rapidly. Thus there may be a very considerable stricture developed, the bad results of which are not obvious to the patient, who may be passing his water with quite a good stream. In such cases it is very difficult to impress upon the young patient, or his friends, that there is anything serious the matter, and failure to pass a catheter is regarded as an error on the part of the medical attendant rather than indicative of a serious condition. But the difficulty is even greater than has been indicated so far. When the bladder fails, as fail it will assuredly do, badly directed efforts at catheterisation, which usually fail, are the cause of a sepsis which leads very quickly to fatal results.

The fact that a traumatic stricture which follows upon a rupture of the urethra at the age of ten years may be twenty years older than even an early case of gonorrhœal stricture must also be regarded as a grave factor in prognosis. I regard, however, the first and second causes of a grave prognosis as the most important, especially the inability to pass a catheter when acute retention consequent upon failure of the bladder occurs.

Another cause of difficulty increasing the gravity of the prognosis is the fact that the ends of the ruptured urethra, in addition to some retraction, may not be in line with each other ; thus the connection between them may lie in an oblique axis, and thus at least two sharpish angles in the course of the healed urethra may be developed —one at the proximal end, and another at the distal end of the damaged area.

TREATMENT.

A traumatic stricture having developed upon a rupture of the urethra as in the three cases which have been cited as exhibiting definite evidence of traumatic stricture the question arises as to the future method of treatment. One case, S. S—, has reached a stage when, owing to the difficulty in the passage of a catheter unless something is done, the bladder will eventually fail in its power to expel urine. He will get retention, the prognosis of which will be rendered no less grave because of the inability to pass an instrument, except in so far as inability to pass an instrument may lead to immediate suprapubic cystotomy without further tampering with the urethra.

I am not now concerned with discussing what ought to have been done on the receipt of the injury. We may lay it down as a rule that with rupture of the urethra the bladder should be opened suprapubically and then drained by this route. At the same time the urethra should be exposed by a perinæal incision, a catheter passed from the meatus and from the bladder ends of the damaged portion, the urethral ends refreshed and sutured, local drainage undertaken as for ordinary wounds and local sepsis treated adequately. If these measures were more frequently undertaken according to the plan indicated we should see fewer of these disastrous cases.

But we have to deal with cases as we see them, and here are three cases with definite stricture of the urethra with practically all their life before them. What shall their treatment be? It must first of all and most emphatically be pointed out to the patient, and to his friends, that the condition is a most serious one, if not now, yet later, that he must keep himself under observation in the same genito-urinary department, and if possible under the care of the same individual who has seen him previously. Such cases are not those upon which students should be taught the commonly accepted manœuvres of passing a catheter. In these cases of traumatic stricture especially, the point of the instrument which is introduced is a palpating instrument—it must feel its way through the stricture; no general rule except this can be formulated for passing an instrument in cases of traumatic stricture. The first rule, then, is this: as long as a catheter can be passed by any one individual, and as long as the bladder shows no clinical or instrumental evidence of failure, so long may the patient continue catheter life. But constant catheterisation in order that the stricture may be kept dilated may not be possible, owing to the business of the patient or other home conditions. Or it may be that he is intending to go abroad, and the question of an operation presents itself for consideration. Catheterisation is then under certain circumstances not advisable nor possible. It is then necessary to perform some operation which shall be of practical utility. A traumatic stricture may be quite short and almost diaphragmatic, although it is always very dense. Such a stricture may be situated in the spongy portion of the urethra, and offers itself, under such favourable circumstances, for excision or even partial excision.

It would appear that the French school of urologists are responsible for many ingenious theories for curing the stricture by a radical operation. But whatever operation may be performed, there are certain important principles which must be followed:

(1) If there is a portion of normal urethral mucosa which is intact in the region of the stricture it must be conserved, and the

radical operation planned so as to maintain the integrity of this portion of the mucous membrane.

(2) All fibrous tissue should be removed as far as possible from the part affected and as little healthy tissue be removed as is compatible with an efficient operation.

(3) The portion of urethra which is to be operated upon should, after operation, be buried as deeply as possible in the surrounding parts. It is to be recollected that owing to various reasons—perhaps the injury, perhaps an immediate operation for relief of symptoms due to the original rupture—the stricture may be lying just under the skin, and the close contiguity of the stricture to the skin cannot be very favourable to its cure. Moreover the sutured urethra, after removal of the stricture by excision, or dissection, should obviously be buried as deeply as possible in order to lessen the chance of sepsis occurring which shall infect the sutured urethra. The deep burial of the excised and sutured region of the urethra may be effected by a series of Lembert sutures placed in the parts superficial to the plane of the urethra, and by the adoption of this method of suturing the urethra may be buried just as deeply as the operator desires. The gauze dressing of the wound should be included as an anchor dressing in the sutures which are used to unite the edges of the superficial skin of the penis or perinæum.

Summary.

(1) Traumatic strictures follow upon ruptured urethra in young subjects.

(2) Suprapubic cystotomy is strongly recommended as a routine incision which greatly assists the adequate treatment of ruptured urethra.

(3) The prognosis of traumatic stricture is very grave.

(4) Treatment by catheterisation may be performed, but this may fail and excision of the stricture be called for.

(5) The important principles in an operation for excision of a stricture are—(1) preservation of an intact urethra; (2) removal of as much fibrous tissue as possible; (3) deep burial in surrounding structures of the sutured urethra.

TWO CASES OF ANOMALIES OF GROWTH: UNILATERAL MACROSOMIA AND CONGENITAL OVERGROWTH OF THE RIGHT LEG.

By J. Black-Milne, M.B., C.M.

Unilateral Macrosomia.

There have now been a large number of these cases recorded, but nearly all in children, and for that reason the following account in an adult may be of a little more interest (*vide* Figs. 1 and 2).

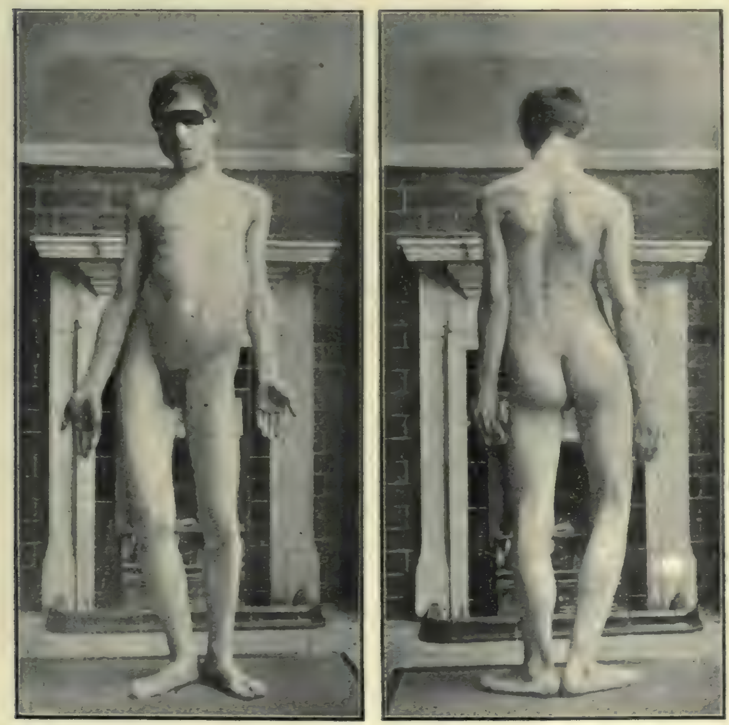

Fig. 1. Fig. 2.

Unilateral macrosomia.

F. B—, male, aged 18 years, was in the A.S.C. and admitted to the Brook War Hospital suffering from rubella.

Family history.—The patient stated that his father was about 6 ft. in height and his mother 5 ft. 6 in. He had three sisters and one brother, *all taller* than himself. There were no deformities or anomalies of growth in the family or in collateral lines.

The following measurements were made:
Height, 5 ft. $3\frac{1}{2}$ in; weight (stripped), 8 st.

	Right (Inches).	Left (Inches).	Difference (Inches).
Head.			
Glabella to occipital protuberance	11	$10\frac{1}{4}$	$\frac{3}{4}$
Sagittal suture to tip of mastoid protuberance	$8\frac{1}{2}$	$7\frac{3}{4}$	$\frac{3}{4}$
Ear.			
From extreme top to bottom of auricle	$2\frac{10}{16}$	$2\frac{6}{16}$	$\frac{1}{4}$
Thorax.			
Circumference at the level of the nipple	15	13	2
Abdomen.			
No appreciable difference on the two sides.			
Upper Limb.			
Humerus (ulna at a right angle, acromion to olecranon)	13	$12\frac{1}{4}$	$\frac{3}{4}$
Ulna (olecranon to styloid process)	11	9	2
From olecranon to tip of middle finger	17	$13\frac{3}{4}$	$3\frac{1}{4}$
Circumference of arm (middle third)	9	$7\frac{3}{4}$	$1\frac{1}{4}$
Circumference of forearm (upper third)	$9\frac{1}{2}$	$8\frac{1}{4}$	$1\frac{1}{4}$
Hand.			
Length from end of radius to tip of middle finger	$7\frac{1}{4}$	$6\frac{3}{4}$	$\frac{1}{2}$
Width across the distal end of the metacarpals	$3\frac{3}{4}$	$3\frac{1}{8}$	$\frac{10}{16}$
Circumference above the knuckles	8	7	1
Length of middle finger	$3\frac{3}{4}$	$3\frac{1}{2}$	$\frac{1}{4}$
Lower Limb.			
From the anterior superior spine of ilium to tip of external malleolus	$33\frac{3}{4}$	32	$1\frac{3}{4}$
Circumference of the thigh (middle third)	$18\frac{1}{4}$	$16\frac{1}{4}$	2
" " calf (" ")	$13\frac{1}{4}$	$12\frac{1}{4}$	1
Foot.			
Length from heel to tip of great toe	10	$9\frac{1}{2}$	$\frac{1}{2}$
Circumference round the heel and instep	13	$12\frac{1}{4}$	$\frac{3}{4}$
" " middle of the metatarsals	9	$8\frac{1}{4}$	$\frac{3}{4}$

Bones.

	Right (Inches).	Left (Inches).	Difference (Inches).
Patella—width across the centre . . .	2	$1\frac{3}{4}$	$\frac{1}{4}$
Tibia—width of inner surface below tubercle	$2\frac{1}{4}$	$1\frac{3}{4}$	$\frac{1}{2}$
Scapula from the inferior angle to middle of spine	$5\frac{1}{2}$	$4\frac{3}{4}$	$\frac{3}{4}$
Clavicles—length from end to end . .	$5\frac{3}{4}$	$5\frac{3}{4}$	*nil*

The pelvis was tilted about 2 in. from the horizontal, and the spine showed marked deviation to the left in the upper lumbar and lower dorsal regions. The hypertrophy was a true one, and there was no increase of subcutaneous tissue on the large side.

Skin.—No congested or discoloured areas nor capillary nævi. The patient has no recollection of these ever having being present.

The hair, nails and sweat-glands showed no difference on the two sides.

Eyes.—Palpebral opening about the same on both sides, and no appreciable difference in the size of the globes.

Tongue.—The right half was much larger and on protrusion deviated markedly to the left. The left side was abnormally small.

Fauces.—The uvula was about the middle line and the palate symmetrical.

Teeth.—Equally developed on the two sides.

The *face*, as a whole, did not show any striking irregularity.

The *fingers* on the left hand were considerably smaller.

The *toes* did not show so much difference.

Testicles.—The right was about of normal dimensions, whereas the left was abnormally small and not more than about half the size of the other.

Muscular power was decidedly less on the left side.

Internal organs.—These probably show as much difference relatively on the two sides as the structures above described, but very few autopsies have been recorded. Two cases were published by Dr. R. Hutchison, with post-mortem examinations, in which the asymmetry of the internal organs was well marked. These included all the paired organs and others, such as the thyroid and thymus glands. Another case, with an autopsy, was published by Dr. H. C. Gordinier, but I have not been able to refer to the details.

The condition described is always congenital, and the general view, and probably the correct one, is that the disproportion of the two sides increases with age. The patient stated that, as he became older, he experienced more fatigue and aching of the muscles of the back and legs on walking any great distance. As regards this point two cases have been reported with contrary results. Dr. G. H. M. Dunlop, in describing a case, mentions that repeated measurements were taken during a period of three years, and the growth of the two sides was found to be equal, whereas Mr. P. Lockhart Mummery observed a case for two years and found the large side growing faster than the other. A further point of interest in the first case was that the temperature in the left axilla (larger side) was found to be 1° F. higher than in the right axilla after several weeks of careful observation.

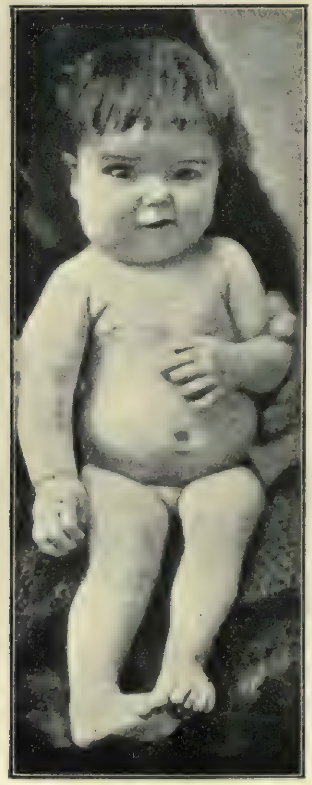

Fig. 3.—Congenital asymmetry.

The anomaly is quite correctly described as unilateral hypertrophy, but there are frequently minor disturbances of growth on the other side. The discoloration of the skin, capillary nævi and varices are rarely one-sided, and some part or organ of the small side may show hypertrophy—the disturbance of growth, in other words, is to some small extent bilateral. In another case (Fig. 3) which I recorded

I suggested that possibly there was overgrowth on one side and defective growth on the other. The point, of course, turns on the standard size for one side at a certain age, which obviously is a very uncertain criterion to go on. Very few cases of unilateral microsomia have been recorded, and of course it is possible that the two conditions might be combined. Crossed hypertrophies of varying degree also occur.

The cause of these anomalies will probably remain unknown like that of many tumours, etc., but as to the time of their origin there is good reason for thinking that it must be in the germinal period, and certainly not later than the embryonic period. The theories which attributed the result to the nervous system, trophic influences, blood supply, etc., are, there is little doubt, erroneous. It seems more as if the forces which control symmetry had ceased to act normally, and that a deformed leaf, flower, fruit or even crystal have an analogous basis in their origin.

Those interested in the subject should consult Dr. J. W. Ballantyne's book and the recent paper by Dr. H. R. Caston, which contains a fairly complete bibliography.

Congenital Overgrowth of the Right Leg.

The patient, male, aged 18 years, was in the R.A.V.C. and admitted to the Brook War Hospital suffering from D.A.H.

The following measurements were made:

Right leg from the anterior superior spine of ilium to tip of the external malleolus	37¼ in.
Left leg from the anterior superior spine of ilium to tip of the external malleolus	35½ „
Right leg, circumference in the middle third of thigh .	15 „
Left „ „ „ „ „ . .	15½ „
Right „ „ of calf	10¼ „
Left „ „ „	10¼ „

It will be noticed that the right leg was 1¾ in. longer, but did not show so good muscular development as the left. This may have been due to the extra strain thrown on the muscles of the left thigh through the tilting of the pelvis. The deviation of the spine to the left and the obliquity of the pelvis are well shown in Figs. 4 and 5. The foot and toes on the right side were rather larger, but the actual measurements are not recorded. The left side of the face and left ear were slightly smaller. No appreciable difference was made out in the size of the arms or hands. The disproportion in the length of the two legs was noticed at birth, and is stated to have increased with age.

This case appears to be closely allied to the previous one, except that the overgrowth of one side remained incomplete.

Heredity.—The family consisted of four sons who were all normal in development except the patient. The chief point of interest, however, in this case was that the father showed a similar anomaly and of about the same degree. As far as I am aware in all recorded cases of hemihypertrophy no heredity has been traced. It would be interesting to know if any adult showing one-sided hypertrophy has had children, and, if so, were they all of symmetrical development.

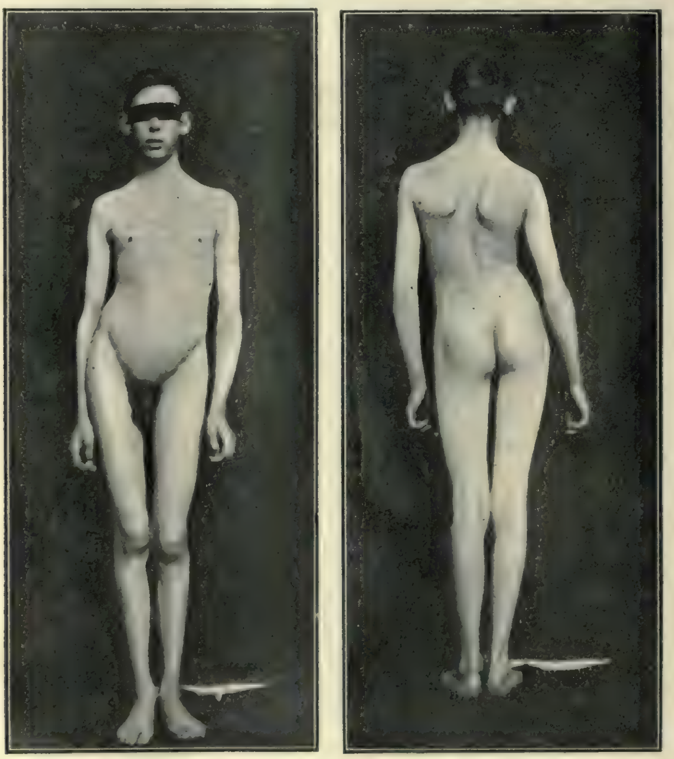

Fig. 4. Fig. 5.

Congenital overgrowth of right leg.

I am indebted to Lieut.-Col. J. B. Byles, R.A.M.C., for permission to give a record of these two cases.

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UNILATERAL DWARFISM OF LIMBS CONNECTED WITH CONGENITAL MULTIPLE CHONDROMATA.*

By F. PARKES WEBER, M.A., M.D., F.R.C.P.Lond.

IT is not generally recognised that the presence of congenital chondromata in long bones may be in some way causally connected with dwarfism of the affected limbs. The patient, V. K—, aged 13 years, is a healthy boy, whose only abnormality on ordinary examination is that his right limbs are too short and somewhat deformed (Fig. 1).

The measurements are as follows: Arms, from acromion to tip of the styloid process of the radius: On the right side, 35 cm.; on the left side, 45 cm. Legs, from the great trochanter to tip of the external malleolus: On the right side, 50 cm.; on the left side, 67 cm.

The accompanying illustrations (Fig. 2 and 3) are from skiagrams taken in January, 1920, and show the presence of a large chondroma at the lower end of the right tibia and of chondromata in the right ulna and right radius. There is a curious bending of the right fibula, doubtless due to pressure from the tibial chondroma.

There is no history of any similar condition in the patient's family. According to the mother nothing abnormal was noticed on his birth, excepting a peculiar mottling of the skin of the right upper and lower extremities. The shortening of the right limbs was not observed until the boy was 1½ years old. One or two orthopædic operations have, I believe, been attempted. In January, 1920, the boy fell and fractured his right forearm. I am indebted for the case to my surgical colleague, Mr. A. Compton.

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* The case was shown at the Clinical Section of the Royal Society of Medicine on February the 13th, 1920.

An almost exactly similar case in a boy, aged 6 years, was recently shown by J. E. Adams at the Section for the Study of Disease in Children as a "Case of Shortening of the Limbs on One Side of the Body"*; another case, in some respects resembling the present one, was shown by Cameron and Trethowan at the same Section of this Society on April the 26th, 1918.† Recently also Clemens described the case of a woman, aged 36 years, with

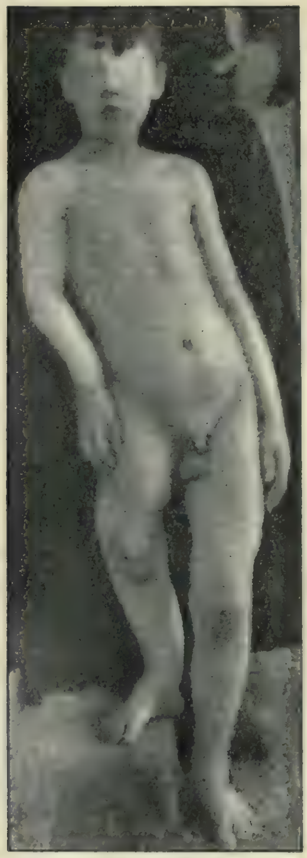

FIG. 1.—Photograph of the patient (1920) to show the dwarfism and deformity of the right limbs.

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* 'Proc. Roy. Soc. Med.,' 1918–19, xii, Sect. Study Dis. Child., pp. 5–8.

† Cameron and Trethowan, *ibid.*, 1917–18, xi, pp. 45–49.

dwarfism, in whom he thought that the deficiency in height was

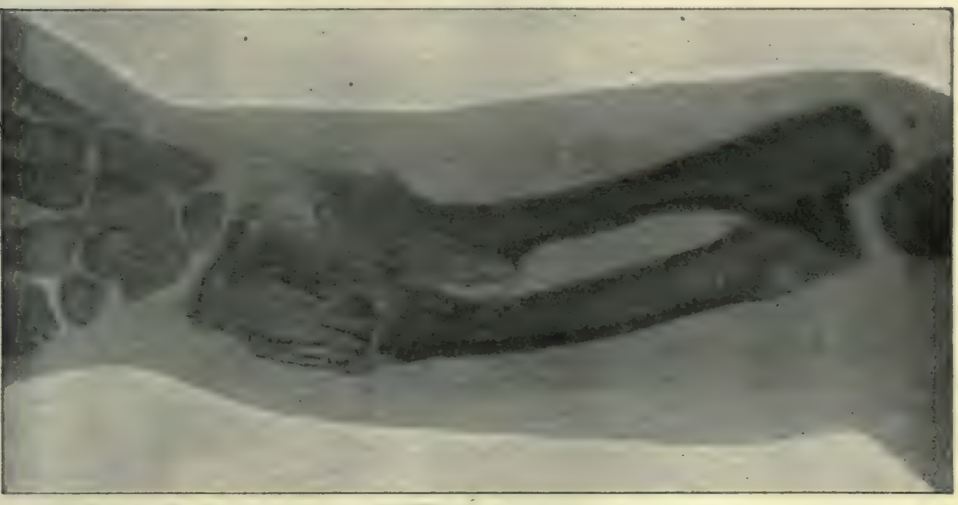

FIG. 2.—Röntgen skiagram (1920) of the right forearm to show the chondromata at the distal ends of the radius and ulna; there is also a smaller one near the proximal end of the radius.

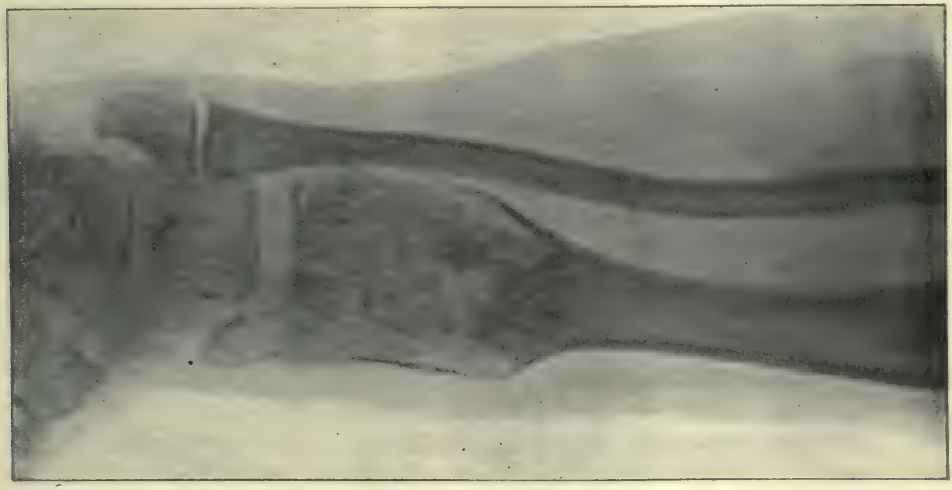

FIG. 3.—Röntgen skiagram (1920) of the distal portion of the right leg to show the large chondroma at the lower end of the tibia.

connected, not with rickets or achondroplasia, but with the presence of multiple chondromata.*

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* Clemens, "Multiple Ekchondrosen bei Zwergwuchs," 'Med. Gesellschaft zu Chemnitz,' May the 14th, 1919; abstract in 'Münch. med. Woch.,' 1919, lxvi, p. 1093.

A RETROSPECT OF OTOLOGY, 1919.

By Macleod Yearsley, F.R.C.S.

Although the war is now over, it is evident that professional literature has not yet completely recovered from its effect. There have, however, been several useful papers upon pædiatric otology during the past year, of which the following have been selected for notice:

Calabresi ('L'Ospedale Maggiore,' February the 28th, 1919) described an interesting case in a child, aged 3 years, of a primary fibro-myxo-angio-epithelioma of the middle ear. The chief symptom was hæmorrhage from the ear, and the case was at first mistaken for one of otitis media with granulations. But the child grew rapidly worse, facial paralysis and a large mastoid swelling occurring. A radical mastoid operation was performed, but repeated removals became necessary and the child died cachectic. The author suggested that the growth arose from the embryonic myxomatous tissue that fills the middle ear at birth.

Pugnat ('Rev. de Laryngol., d'Otol., et de Rhinol.,' August the 15th, 1919) published an interesting paper on primary diphtheria of the middle ear. He believes the Eustachian tube to be the route of infection and discounts any suggestion of hæmatogenous infection. Prognosis rests absolutely on early diagnosis, because an early injection of serum usually ensures the subsequent integrity of hearing.

Fournier (*ibid.*, April the 15th, 1919) described an instance of congenital fistula of the ear, commencing at the attachment of the helix and running down through the parotid to the angle of the jaw, where it opened. There was a history of occasional abscesses.

The question of *meningitis* in its otitic connection is an important one and two valuable papers have appeared upon it. The first of these was Sir H. Rolleston's lectures on cerebro-spinal fever ('Lancet,' 1919, i, pp. 541, 593 and 645). In these he makes the following observations upon nerve-deafness: It is less common than formerly. Deafness may be due also to otitis media, which is not regarded as a common complication of cerebro-spinal fever. Reference is also made to the use of nasal douching with 1 in 1000 permanganate of potash or spraying with dichloramine-T as a prophylactic, and the similar local treatment of carriers.

Aboulker ('Rev. de Laryngol., etc.,' May the 31st, 1919) publishes his deductions as to the best line of treatment in otitic meningitis, from a series of sixteen cases. In *septic meningitis*, if confirmed after the mastoid operation, incision of meninges by the mastoid route, counter-openings in the temporal and suboccipital regions with incision of meninges, and intrathecal injections of electrargol. If confirmed before operation the procedure is the same, except that the radical mastoid operation is performed first. In *aseptic meningitis*, if confirmed after mastoid operation, exposure of dura, repeated lumbar puncture with examination of the cerebro-spinal fluid. Confirmed before mastoid operation, this operation is done first. If it be meningitis with extension, exposure of dura with lumbar puncture is advised if it be benign and transient; when persistent, exposure of dura by transmastoid route without incision. Temporal or suboccipital trephining, incision of meninges, and exploratory punctures.

In connection with meningitis, attention may be drawn to a paper by Regan ('Amer. Journ. Med. Sci.,' January, 1919), on the anatomical points determining the direction of the needle and the proper route for lumbar puncture in children and adults. In children the needle should be introduced directly perpendicular to the spine and exactly in the middle line.

Guthrie ('Lancet,' 1919, ii, p. 429) has published a useful little paper on aural suppuration in early childhood, its prevention and treatment. It is specially to be commended for its preventive tone. Measles and adenoids are, he considers, the two principal causes of aural suppuration in young children. His scheme of treatment embraces (1) cleansing and antisepsis, which will cure the majority of cases; (2) removal of adenoids; (3) the conservative operation (modified radical), in order to conserve the hearing; (4) the radical operation, which is very seldom indicated in childhood and should only be performed in carefully selected cases.

Stoker ('Lancet,' 1919, ii, p. 200) has suggested the use of bismuth and iodoform in the treatment of chronic suppurative otitis media, especially in cases where the bony tympanum is carious. The technique of his method is: (1) Establishment and maintenance of thorough drainage; (2) removal of dead epithelium, etc., by hydrogen peroxide; (3) thorough cleansing of meatus and tympanum with spirit, swabbed on and allowed to dry; (4) covering with insufflations of bismuth and iodoform. In mild cases one, and in profuse cases three applications weekly will suffice.

Lastly, Catherine Lewis ('Lancet,' 1919, ii, p. 830) has published a most interesting case of chloroma simulating mastoid disease in a male child, aged 10 years. There are records of sixty-five cases of this growth in the literature. It has been variously regarded as a carcinoma, a sarcoma, and a variety of lymphatic leukæmia. In no case, however, that we know of, has its onset resembled mastoiditis, although frequently head symptoms are the first indication.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, November the 28th, 1919.

The President, Mr. J. P. Lockhart-Mummery, *in the Chair.*

Chronic Jaundice: Congenital Defect of the Bile-ducts.—Dr. Edmund Cautley.—Male, eighth child, born on February the 13th, at full time and apparently healthy. Jaundice appeared on fourth day and had persisted.

The patient was in hospital from April the 4th to the 12th and from September the 18th to November the 23rd. At first he was breast-fed, well nourished, 9½ lb. in weight, jaundiced, and presented acholia, bilinuria and a large liver. The degree of jaundice varied. He was readmitted with temperature 103° F., falling to normal next day. He weighed 13 lb. There was a history of diarrhœa and vomiting for two days, but neither symptom occurred after admission. Jaundice was still present, but had been clearing up recently. The liver was large and hard, and the spleen enlarged.

During his stay in hospital he had a variable degree of fever, due to bronchial catarrh. Acholia and bilinuria had been persistent, and the weight had varied from time to time, according to the amount of catarrh and his appetite for food, which consisted of milk and water, with Horlick's malted milk and Benger's food. The liver had decreased somewhat in size and become harder and irregular, and the spleen had got larger and harder. The Wassermann reaction was negative.

The case was interesting from the point of view of diagnosis and the duration of life. Dr. Cautley was disinclined to think it one of cholangitis, in view of the absence of febrile disturbance in the early stages. On the other hand, most cases of congenital obliteration of the bile-ducts only lived six to eight weeks. Life was, however, sometimes prolonged for eight or nine months. Dr. Kenneth Kellie showed a patient of this type in 1911, a male baby, aged 5 months, who died subsequently at 7 months of age, and had a large, smooth, green liver, a hard spleen, a rudimentary gall-bladder and a common bile-duct represented by a fine cord. Slight jaundice had been present since the fourth day of life. It was curious that the jaundice was slight and variable in degree in some of these patients.

Specimens from Four Cases of Punctate Ulceration on the Stomach in Infants.—Dr. Eric Pritchard and Dr. W. T. Hillier.—The specimens were all taken from cases of young infants who died of a peculiar form of gastritis occurring in cases in the wards of the Queen's

Hospital for Children; they showed numerous and very minute ulceration; excessive vomiting was characteristic of all the cases, and in most of them blood-stained mucus was present in the vomit. Similar ulcerations of a follicular character were also found in the intestines.

Specimens from a Case of Hypertrophic Pyloric Stenosis with Associated Hypertrophies.—Dr. ERIC PRITCHARD and Dr. W. T. HILLIER.—The specimens were taken from a baby aged 3 months, who died of hypostatic pneumonia; they showed great hypertrophy of the lower end of the œsophagus, of the pylorus, and of the ileo-cæcal sphincter. At the cardiac orifice there was a polypus-like growth of mucous membrane about the size of a small pea. The stomach *intra vitam* had a capacity of about 4 oz. The transverse colon opposite to the greater curvature of the stomach was dilated.

Macroscopically the adrenals were normal.

The interest of this case lay in the association of hypertrophies at three points in the alimentary canal, which it had been suggested might be dependent on overaction of the adrenals either before birth or after, or on want of compensation by antagonistic secretions.

Tuberculosis of the Heart.—Dr. T. H. GUNEWARDENE.—The tuberculous focus was situated in the wall of the left auricle, and had invaded the mouths of the pulmonary veins, the interauricular septum and the rings of the auriculo-ventricular orifices. There were areas of caseation, and tubercle bacilli had been shown to be present. The lesion was apparently primary, and no tuberculosis was found elsewhere in the body. The history was of two months' duration, and the signs during life were those of hypertrophy and dilatation merely; no bruits were heard. Of forty-one cases of tuberculosis of the heart which he had seen records of only one had so extensive a lesion.

Cirrhosis of the Liver.—Dr. R. C. JEWESBURY showed a case of cirrhosis of the liver in a boy, aged 4½ years. He had been well until 2½ years old, when jaundice appeared, and was followed by abdominal swelling. The jaundice lasted only a few days. There had been attacks of epistaxis, but no other hæmorrhage, and vomiting had been occasional only. The liver was very large, hard and irregular; the spleen reached to the level of the umbilicus. The fingers and toes were clubbed. Only a faint variable systolic murmur was heard. The mother had confessed to giving the child a teaspoonful of gin in hot water occasionally for three and a-half years. The Wassermann reaction was negative. The blood examination showed considerable anæmia, a colour index of 1, and 2200 white blood-corpuscles per c.mm. The diagnosis of alcoholic cirrhosis was suggested.

Isolated Scaphoid Disease.—Dr. COCKAYNE showed skiagrams of a case of isolated scaphoid disease (Köhler's disease). The patient was a cretin, aged 4½ years, who had complained of pain in the left foot and had limped for a year. Recently the foot had become more painful. There was some tenderness over the scaphoid region. The skiagram showed the left scaphoid bone to be small, narrow, dense and irregular, and to project on to the surface. There was no evidence of tubercle.

Friday, January the 23rd, 1920.

The President, Mr. J. P. Lockhart-Mummery, *in the Chair.*

Œsophagectasis in an Infant.—Dr. F. Langmead.—The patient, a girl infant, was born at full term by a normal labour. She was a very small baby weighing no more than 4 lb. at birth. Shortly after birth it was noticed that "something was wrong with her stomach." On the first day she retched and "vomited," even before her first feed. She was breast fed for one week, during which time she "vomited" occasionally and her stools were green. At one week she was weaned and put on cow's milk and water. She was now constipated, but the "vomiting" continued; it occurred about an hour after food, was not projectile, and was often brought on by change in posture. At 4 months she was wasted and weighed "no more than 3 or 4 lb." Afterwards the "vomiting" was not so frequent and occasional feeds were retained. The constipation continued, hard small stools being passed. After her feeds she used to be very quiet, pale, and "collapsed," but recovered, and the colour returned after "vomiting." She slowly gained weight, and reached 14 lb. 5 oz. at a year and three months old, one month before admission. For three or four months before admission the "vomiting" followed immediately after or coincided with a meal, and the food "did not seem to enter the stomach at times." The vomit was unaltered milk, sometimes accompanied by mucus. The father and mother were both healthy, and there was no history of neurasthenia or neuroses on either side of the family. The patient was a third child in a family of three, the elder members being quite well. No miscarriages. On admission to hospital on November the 28th, 1919, the child was found to be fairly well developed and nourished, but with a pale face, slightly sunken eyes, and hanging folds of skin, indicating recent loss of fat. The fontanelle was slightly depressed. There were no signs of rickets. Examination of the abdomen revealed no tumour or gastric peristalsis. Heart and lungs were apparently normal. The knee-jerks were very exalted, otherwise there were no abnormal nervous phenomena. The urine contained acetone in definite amounts. After admission the child cried incessantly, apparently without pain. A stomach-tube was passed but no food washed out. During the first twenty-four hours the child refused all food and was fed by a tube; she "vomited" afterwards. Next day she took equal parts of milk and water a little better, but cried almost continuously if not nursed or petted. A single vomit contained mucus; the milk was not digested and contained no curd. On December the 4th, six days after admission, X-ray examination was made after a bismuth meal. Three screenings were done—one immediately after the meal, one an hour later, and the last three hours later. A dilatation of the œsophagus was detected near its lower end, centrally placed, and about the size of a hen's egg. Immediately after the meal most of it was seen to be retained in the œsophageal sac, but some had passed on into the stomach. The second and third screenings showed that part of the meal was still retained. There was no obstruction in the alimentary track below the cardia. As the result of this examination an attempt was made to pass a stomach-tube twice a day with a view to introducing food and dilating the cardia. This appeared to be successful, but there was some doubt whether the tube curled up in the sac or traversed the cardiac opening. The vomiting was now less, but only 6 oz. could be held, the rest flowing back. To elucidate this point an opaque tube was passed under X rays, and it was found that the tube, $\frac{1}{3}$ in. in diameter, would not pass through the cardia, but curled back into the sac on reaching the lower end. Since the child was losing weight and a tube could not be passed, Mr. O. Addison saw her with a view to surgical treatment. The œsophagus was examined with an œsophagoscope, which passed freely into the stomach under an anæsthetic, and revealed no organic cause for the retention of food in the gullet. No operation was considered advisable. The case appeared to be one of œsophagectasis due to want of relaxation of the cardiac sphincter dating from birth, and to be similar to the examples of greatly dilated œsophagus recorded in adults. The absence of cough and dyspnœa, such as occurred in adults, could be explained by the relatively small degree of dilatation. There was probably a close analogy between this condition and that of pyloric spasm, and it would appear that it bore the same relationship to hypertrophic stenosis of the cardia that pyloric spasm did to hypertrophic stenosis of the pylorus.

Cirrhosis of the Liver in a Child.—Dr. R. C. Jewesbury showed the liver of a case of cirrhosis in a child previously exhibited before the Section and ascribed to alcohol. The cirrhosis was of the usual multilobular form, but the nodulation of the surface was not pronounced, and large areas were smooth.

Sclerodactylia with Raynaud's Phenomena and Necrosis of Nasal Bones.—Dr. E. A. Cockayne.—The patient was a boy, aged 1 year and 2 months, who appeared normal up to the age of 3 weeks. At this age a bluish area appeared on the left hand, which was swollen. According to the mother, the centre of this came out as a "core." Shortly after this the child had an attack of diarrhœa and sickness. At 10 weeks there was a greenish-yellow offensive discharge from the nose, which had continued on and off ever since. The child was seen first at the age of 5 months. The bridge of the nose was very depressed and there was an offensive discharge. The fingers were blue and cold, with small septic areas on them, and the nails were deformed, and continued in that condition all through the summer. The child was fairly well nourished, but very susceptible to cold. There was a swollen red area just in front of the right ear, and a blue cold area with a necrosed centre in the middle of the cheek. The hands were blue and cold, and the child gave evidence of a good deal of pain in them. The fingers were thin, the skin blue and glossy, the nails deformed. Over the finger-tips and nails there was much dry, thickened epithelium. There was limitation of passive and active movements at the interphalangeal joints. The legs showed a blue mottling, and there were small scars on both legs. The toes were normal, but cold and blue. While under observation the finger-tips had been almost black on two occasions, and on the dorsum of the left hand there had been a blue area with a dark centre of necrosed tissue. The Wassermann reaction in both mother and child proved negative on two occasions in April and in July, 1919.

Polioencephalitis affecting the Midbrain.—Dr. F. J. Poynton.—The patient, a girl, aged 10 years, was a healthy, active child before the onset of the illness. The first symptoms arose in July, 1919, when she lost the use of her right arm. Later in the day her face became affected, and appeared "to be twisted to the right." The child's mother stated that there was no accompanying loss of consciousness, vomiting, or signs of an acute feverish condition, and that she complained only of slight headache and loss of appetite. During the next few days she lost the use of her right leg, left leg, and left arm in turn, and her speech became affected. Within a week of the onset of the symptoms she was confined to bed, unable to move her limbs, which were stiff and rigid, and spoke only in almost unintelligible monosyllables. She was very quiet and depressed, though subject to frequent emotional outbursts. She lay in this condition for a month before any change appeared. This was first seen in improvement in her speech and in return of the power to use her left arm, and was progressive up to her admission to hospital in October. On admission she showed spastic paralysis of the right arm and leg. The arm was in a position of flexor rigidity, and there was a coarse tremor of the right hand. The tremor, absent during sleep, or when the body was in a position of rest, was immediately brought into play by any emotional disturbance, attempt to speak, or carry out any muscular effort. On the left side the arm could be moved, but the movements were wildly ataxic; the leg was rigid, but there was slight movement at the hip- and knee-joints. Speech was slow, stuttering and hesitating. There was no squint or ptosis. The pupils were equal, reacting normally to light and accommodation. The face was expressionless, and when the child was emotionally disturbed the loss of expression became more marked on the right side; but there was no true facial nerve paralysis. The right plantar reflex gave an extensor response, and there was an increased knee-jerk and ankle clonus on the right side. The left plantar reflex gave a more indefinite extensor response, difficult to elicit. There was no ankle clonus on the left side; the left knee-jerk was increased. No changes in sensation were detected. The fundi were normal. The cerebro-spinal fluid was clear, sterile, and without any increase in cells or albumin content. The Wassermann reaction was negative. No abnormal physical signs could be detected in the heart or lungs. The urine was normal. During the past two months the clinical picture had changed a little. While the right hemiplegia had persisted unaltered except for a slight return of movement in the right leg and right arm, there had been distinct improvement in the tremor of the right hand, the ataxia of the left arm, the speech, and the control of the emotions. The ataxia, which on admission was very wild, had almost disappeared. She was no longer subject to the sudden and inexplicable emotional changes. A careful look-out had been kept for any signs of ocular paralysis. In December there was slight inequality of the pupils for about two weeks. During the past three weeks there had been a fine lateral nystagmus, but there had been no signs of third, fourth or sixth nerve involvement.

Friday, March the 26th, 1920.

Rheumatoid Arthritis with Nodules.—Dr. D. H. Paterson.—The patient was a girl, aged 8 years. She had swollen joints and stiffness of the neck, which had come on gradually and had been present for 12 months. She was the third child of the family. The father was alive and well except for bronchitis, aged 46. The mother alive and well, aged 35. She had one brother aged 3 years, and four sisters alive and well, aged 10, 7, 5 and 1 year respectively. One died at 4 days after a difficult labour. There were

3 miscarriages distributed among the other pregnancies. The patient was a full-term child, born by normal labour. She was breast-fed for 3 months, then with cow's milk and water, half and half. She cut her first tooth at 6 months, sat up at 9 months, walked at 13 months, talked at 14 months. The family of eight lived in two rooms at the top of the house on high ground, but the rooms were damp. The patient had had whooping-cough at 3 years, scarlet fever at 4 years, and chickenpox at 5 years. It was first noticed that the wrists were swelling about 12 months ago. On admission to hospital there were definite nodules on her elbows and painful wrists and ankles noted at the time. There was no heart lesion. Because of the nodules she was thought to have acute rheumatism at that time. She was however, discharged with a large nodule on her right elbow as she showed no other symptom of acute rheumatism. Practically all the joints of her body had been affected since this time. She had never been quite free or fit. It was only a week before admission that her neck became affected. On re-admission she was seen to be a rather thin, hollow-eyed child with auburn hair. Both wrists were thickened and the backs of the hands were swollen, with atrophy of the interossei. There was a large nodule on the left elbow as well. The epitrochlear glands were enlarged on both sides and there were shotty glands along the posterior border of the sternomastoid muscle on the right side also. The neck was stiff and sore when moved. The other joints did not seem involved. The heart was regular. There were no bruits, and the cardiac dulness was not increased. The chest was rather flat. Percussion note was resonant throughout. Breath-sounds were vesicular. Tongue clean; Teeth good. The tonsils had been removed. Abdomen well formed. Liver and spleen were not palpable. No areas of rigidity or tenderness. The pupils reacted to light and accommodation. The abdominal reflex and knee-jerks were present. Plantars flexor. Temperature had been normal since admission. Occasionally got pain in her wrists.

Case of Hemi-hypertrophy.—Dr. H. H. Chodak Gregory.—A girl, aged 2½ years, with marked asymmetry of the body and limbs. The condition was noticed at birth, and the mother thought that there was no more disproportion now than there was then. The father and mother were normal and the other children were said to be symmetrically developed. The left leg and foot, the left arm and hand, the left side of the abdomen, chest and tongue were all obviously larger than the right. On the other hand the right side of the head was slightly larger than the left. The size (compared with other children of the same age) and the shapeliness of the right side seemed to indicate that this was the normal side, and that the left was abnormally developed. The actual measurements were: Arm—acromial process to end of thumb, right 11½ in., left 13½ in.; circumference, middle of upper arm, right 6 in., left 7 in. Leg—anterior superior spine to internal malleolus, right 14¼ in., left 15¼ in.; circumference, middle of thigh, right 10 in., left 11½ in. Abdomen—spine to umbilicus, right 10 in., left 11¼ in. Thorax—spine to mid-sternum, right 9½ in., left 11 in. Skull—greatest semicircumference, right 6½ in., left 5½ in. The tongue had not been measured, but it was obviously considerably larger on the left than on the right side; the left side of the face was also a little bigger.

Anæmia with Splenomegaly.—Dr. D. H. Paterson.—A male child, aged 4 months. A swelling had been noticed in the abdomen for a fortnight. Since the age of two weeks he had been losing weight, and had always been pale. For two weeks before admission there had been loose green stools. Cardio-vascular and respiratory systems were apparently normal. The left flank was occupied by a large mass, which seemed to be the spleen, and which extended forwards to within an inch of the umbilicus and reached to the pelvic brim. The liver was also large, reaching $1\frac{1}{2}$ fingers' breadths below the costal margin at the ninth rib. Lymphatic glands were not large. The stools and urine were now normal. A blood examination showed red blood-cells, 3,440,000; white cells, 18,000; hæmoglobin, 30 per cent.; colour index, 0·4. Differential count: polymorphs, 29 per cent.; small lymphocytes, 35 per cent.; large lymphocytes, 16 per cent.; transitionals, 1 per cent.; neutrophilic myelocytes, 12 per cent.; basophilic myelocytes, 3 per cent.; normoblasts, 2 per cent.; and megaloblasts, 12 per cent. Polychromatophilia was present. The Wassermann reaction was negative. The case was regarded as one of v. Jaksch's anæmia.

Splenomegaly.—Dr. D. H. Paterson.—The patient was a girl aged 5 years. She was somewhat pale and puffy, with flabby muscles and slight enlargement of the spleen and liver. The lymphatic glands were not enlarged. The girl was prone to "dirt-eating." On admission the red corpuscles numbered 3,680,000 and white corpuscles 7200, of which polymorphs were 46 per cent.; small lymphocytes, 32 per cent.; large lymphocytes, 19 per cent.; large mononuclears, 2 per cent.; and myelocytes, 1 per cent. The hæmoglobin was 32 per cent. and colour index 0·4. A week later the spleen was noted to be larger. The red blood-cells had diminished by about 1,000,000 and the hæmoglobin by 7 per cent., while the white cells had increased to 14,000. The differential count remained approximately the same, but the myelocytes had increased to 3 per cent. and 4 per cent. nucleated red cells were noted. The Wassermann reaction was negative. The view was expressed that possibly the case was an example of a late stage of recovering splenic anæmia of the infantile type (v. Jaksch's anæmia).

CLINICAL SECTION.

February the 13th, 1920.

Unilateral Dwarfism of Limbs connected with Congenital Chondromata.—Dr. F. Parkes Weber (*vide* p. 85).

Malignant Endocarditis affecting the Pulmonary Valve.—Dr. H. Batty Shaw showed a youth, aged $16\frac{1}{2}$ years, who had been troubled with "heart complaint" for $2\frac{1}{2}$ years, his symptoms being palpitation and shortness of breath on effort. Previous to that he had had no illness of any kind. He was admitted to hospital with the history that he had developed pain over the heart during the previous four days. While in hospital he had fever of a remittent and intermittent character almost continuously, the maximum being 104° F., the pulse varied from normal to 120, and the respirations from 24 to 30. He had always been of pale complexion, and during his stay in hospital had steadily lost weight and was now $2\frac{1}{2}$ st. under weight. Blood examination showed secondary anæmia and 5500 leucocytes per c.mm., the polymorphonuclears numbering 75 per cent.; cultures from the blood showed a *Streptococcus longus*. The spleen was enlarged and tender; blood had been found in the urine on one occasion, and there were pain and some *râles* in the right axilla. A loud systolic murmur was heard over the pulmonary area, and there was a distinct systolic thrill conducted towards the left clavicle. From the facts that the cardiac symptoms had only been noted during the last 2½ years and that there was no cyanosis or clubbing of the fingers, the conclusion was drawn that the narrowing of the entrance of the pulmonary artery was due to malignant endocarditis of the valves, and that the case was not one of malignant endocarditis developing on valves damaged by congenital heart disease.

SECTION OF LARYNGOLOGY.

December the 5th, 1919.

Supernumerary Nostril and Cavity.—Mr. H. BELL TAWSE showed a female child, aged 16 months—one of twins; the other was anencephalous, and died at birth. The patient presented a supernumerary nostril and nasal cavity on the right side. The cavity led up to the root of the nose, and on the skin surface corresponding to the termination of the cavity was a dimple, which was said to have discharged watery fluid at times but was now dry. There was profuse discharge of mucus from the cavity, and on probing it blood appeared from the sound and normal nostril lying beneath it, indicating some communication between the two. On touching the eyelids the dimple and supernumerary nostril were seen to contract. Bacteriological examination of the discharge showed *Micrococcus catarrhalis* and diphtheroids. As regards operation there were two alternatives—either to incise the skin from the root of the nose to the lips, excise the supernumerary nostril and the partition between it and the normal one, removing at the same time any dermoid remains, or to throw the two cavities into one by removing the bridge of skin and the partition between them.

Nasopharyngeal Angiofibroma.—Dr. G. W. DAWSON showed a boy, aged 13½ years, who had come under his observation in June, 1918, with a tumour which bulged the left cheek, appeared in the pharynx, displacing the soft palate downwards, and presented itself at the left nostril. After a preliminary laryngotomy the tumour was removed by working through the mouth and nostril. He returned to hospital in March, 1919. The tumour had recurred, presenting much the same appearance as when first seen. On April the 5th 90 mgrm. of radium were inserted under the mucous membrane over the left antrum and left for twenty-four hours, and on May the 1st 80 mgrm. were inserted into the post-nasal space and left for twenty hours. No effect occurred beyond causing a scar in the left cheek. The tumour was therefore removed by the external route. Laryngotomy was performed, and an incision made from the angle of the eye along the nose and dividing the upper lip. On reflecting the cheek the whole mass of the tumour came into view, the whole of the external wall of the antrum being absorbed. The floor of the orbit was very thin, and two molars so thin as to be easily plucked out. The tumour was then removed with raspatory and scissors. Recovery was uneventful.

Congenital Occlusion of one Choana.—Dr. J. Dundas Grant showed a little girl who had been brought to him for persistence of nasal obstruction in spite of removal of adenoids. He found the left cavity occupied by a good deal of firm, shiny mucus and complete obstruction of the posterior choana. The obstruction was mainly osseous, and only the central portion appeared to be fibrous. The posterior part of the septum was removed and the obstructing bone was chiselled away till the choana was restored to nearly its normal size. There was no return of the obstruction.

Foreign Body (Mutton-bone) Removed by Crico-tracheotomy from the Larynx of a Boy, aged 10 years.—Dr. Douglas Guthrie.—The patient while eating bread and dripping was suddenly seized with a fit of coughing, and said that something had stuck in his throat. He was brought to hospital next day for pain in the larynx, dyspnœa, hoarseness and stridor. An antero-posterior skiagram showed no foreign body, but a lateral view revealed a shadow in the subglottic region opposite the fifth cervical vertebra. Under suspension laryngoscopy the piece of bone was clearly visible, but a good grip of it could not be secured. Breathing became so embarrassed that tracheotomy was performed, and further attempts to dislodge the bone were deferred till two days later, when the wound was enlarged. It was necessary to divide the cricoid cartilage before removal could be effected. The tracheotomy tube was removed next day, and subsequent recovery was uneventful. In spite of the injury to the cricoid cartilage, the patient was found to be free from any sign of laryngeal stenosis on being examined two years later.

Philadelphia Pediatric Society.

October the 13th, 1919.

Multiple Sarcomatosis.—Dr. Ralph L. Engle.—The patient was a girl, aged 2¼ years. The family and past history were entirely negative, the child being born at full term, and developing normally in every way until the present condition, which had begun eight months ago. The first nodules appeared one under each eye. Subsequently nodules appeared on the dorsum of the left hand and the lower left jaw and the cranium. All the nodules with the exception of the last one had broken down, and were now discharging. There had been a severe cough. Appetite good and digestion normal. Examination showed a fairly well nourished female coloured child, and also revealed the nodules mentioned in the history. There was no marked enlargement of the superficial lymph-nodes. X rays showed generalised sarcomatosis involving the skull, in which there were three distinct areas. The chest showed marked infiltration in the right lung, and the nodules in the hand and jaw were visible in the skiagram. The urine was negative. Blood examination showed 3,540,000 red corpuscles, 16,550 leucocytes, and 60 per cent. hæmoglobin; the differential smear showed 70 per cent. polymorphonuclears, 3 per cent. large mononuclears, 19 per cent. lymphocytes and 3 per cent. eosinophils.

Scorbutus in an Infant with Czerny's Exudative Diathesis.—Dr. Howard Childs Carpenter.—The patient, aged 11 months, had had a cough and had suffered from malnutrition since birth. The infant had been under observation for three months with well-marked scorbutus, the chief symptom of which was marked swelling of both thighs.

The X-ray examination showed an extensive sub-periosteal exudate with marked calcification. In addition to the scorbutus, the infant had a well-marked rachitis, and presented all the classical symptoms of Czerny's exudative diathesis, such as recurrent bronchitis, seborrhœic eczema, miliaria, increased deep reflexes, a persistent rhinorrhœa, general enlargement of the lymphatic glands, including the bronchial, 60 per cent. hæmoglobin, 6 per cent. eosinophilia and a blood sugar of ·11 per cent. There was a high plasma chloride, the blood showing 6·68 grm. per litre. The infant showed a very marked tolerance for belladonna.

Operative Correction of Paralytic Foot Deformity.—Dr. DE FORREST P. WILLARD.—The patient was a girl, aged 9 years, who had had infantile paralysis when six months of age, followed by permanent paralysis of the calf muscles and flexors of the toes with marked deformity of the foot (talipes calcaneo-valgus). Treatment was begun at one year of age. Four years ago the child was operated on and a transverse horizontal section of the tarsus was performed. After this there was a cast and a brace for six months. There had been no treatment since. There was now no lateral deformity of the foot, there was full ankle motion, and the child could walk without a brace.

Tuberculous Pericarditis.—Dr. L. FERNALD FOSTER.—The patient was a seven-year-old coloured boy.

The condition was of six months' duration, beginning with præcordial pain, œdema of extremities and dyspnœa proceeding to orthopnœa. There was no past history of note but a family history of pulmonary tuberculosis in the father with direct contact with the patient.

Four months after the initial symptoms the left chest was flat to percussion from the clavicle to the costal margin and from the anterior axillary line to 5·5 cm. beyond the midsternum on the right. Just below the right clavicle the breath-sounds were of fair intensity; over the rest of the front of chest they were distant or diminished. The heart outline was indistinguishable and its sounds inaudible. The liver was then 10 cm. below the costal margin.

The case one month before presentation showed normal breathing on right side anterior to the sixth interspace. In the seventh, however, was distant bronchial breathing from the right anterior axillary line to the sternum where it extended to the upper left chest, when it was heard best at second interspace. Dry friction-sounds then appeared in the left axilla as far back as the posterior axillary line. The cardiac impulse was then palpable in the 5th interspace just inside of the left nipple line.

On presentation of the case the friction-sounds were heard over the whole left chest and the right chest was full of crepitant *râles*; the upper lobe gave increased vocal resonance, prolonged expiration and fine crepitant *râles*. The right-sided bronchial breathing in the seventh interspace, noted previously, still persisted. The temperature was always irregular, from normal to 101° F.

The chest fluid was inoculated into guinea-pigs, which subsequently developed a mild, nodular type of tuberculosis.

An X-ray plate showed a large shadow in the left chest which reached well past the normal limits of the cardiac shadows, especially on the right.

Double Congenital Equino-varus with Marks of Cord Pressure about both Legs.—Dr. J. Torrance Rugh.—The patient was a girl, aged 4 years, and was sent to the Jefferson Hospital for the correction of club-feet. Examination showed deformity of the third degree, which could not be corrected by the hands nor maintained corrected. No attempts at correction had ever been made in the feet. About 2½ inches above the ankle-joints on each leg there was a deep groove running obliquely around the leg. The groove was about one inch broad and on the left leg was very much deeper than on the right. The nutrition in both feet appeared good, and the child had been walking part of the time on the outer and dorsal surfaces of the feet and part of the time on her knees. There was about 15° of flexion in the knees. Mentally the child was not as far advanced as the ordinary one at her age. Her speech was very poor and indistinct. Her general nutrition was good. In the latter part of July Dr. Rugh did extensive tenotomies about the arches and soles of the feet, partially corrected the deformities and placed the feet in plaster-of-Paris in the corrected position. Two days later the toes were red and swollen and it was necessary to cut the casts. Sloughing of the skin took place in the left foot and there were several local spots of pressure on the right foot. The skin necrosis on the left foot became so extensive that all efforts at correction of the deformity were abandoned. Because of the very marked constriction of the leg from the cord pressure it was felt that correction would be impossible and an amputation was done in the early part of August. Recovery from this was uneventful. The stump was good but there was flexion contraction at the knee. Since that time practically complete correction of the deformity in the foot had been secured by tenotomies and plaster-of-Paris and she was about ready for a walking brace.

Congenital Elevation of the Scapula (Sprengel's Deformity).—Dr. J. Torrance Rugh.—The child was two years of age, and first came to the Methodist Hospital about six months ago because of the inequality of its shoulders. There was no pain nor muscle-spasm ; there was some limitation of motion in the anterior direction and the shoulder was on a very much higher level than the opposite one. In the supra-scapular fossa the upper edge of the scapula could be felt bending forward and the postero-superior angle was felt to be fixed to the spine. The X-ray plate showed that the fixation was caused by a piece of bone which was attached to the spine. It also appeared to show a rachischisis of the cervico-dorsal spine. The treatment would consist in the removal of the piece of bone, the separation of the muscles from the upper portion of the scapula, the removal of the upper border of the scapula to allow it to drop downward over the ribs and the fixation of the shoulder as low down on the ribs as possible.

Naso-frontal Meningocele.—Dr. Warren H. Johnston.—The patient was a child, aged 1 year, born of healthy parents at full term. The labour was prolonged and difficult, terminating in a forceps delivery, which left many marks on the child's head. The meningocele was quite black at birth, and was large enough to obscure the nose, only the nasal orifices being visible. The patient had developed normally and satisfactorily. The tumefaction varied in size and was smaller in proportion to the size of the head than it was at birth. It could be greatly reduced by pressure and curiously enough became smaller when the child cried. A few months ago the swelling would almost disappear at times.

It was situated in the naso-frontal region just below the glabella, apparently coming from the naso-frontal junction through the horizontal plate of the ethmoid bone.

There was a communication with the subarachnoid space, because the tumour was transparent and pulsated. There was a curious nipple-like formation at the summit of the swelling, but its location in the middle line of the body precluded a possibility of its being a supernumerary nipple. Although operation would be attended with certain perils, Dr. Johnston advised surgical removal because of the hideous deformity. The pedicle would be tied at the base and a piece of bone (probably tibia) would be placed in the gap to close it effectually.

Suppurating Fasciitis with Extensive Intermuscular Calcification.—Dr. Harry Lowenburg.—He had been unable to formulate a definite diagnosis, as he had never previously seen a similar case and had been unable to find anyone else who had. The term used was descriptive of the pathologic condition. The patient was a seven-year-old male child, who was first seen seven months ago when he came to Dr. Lowenburg complaining of pain in the right thigh. He walked with a slight limp. He had been treated for rheumatism medically and with electricity for three and a-half years. There was tenderness of the right leg and thigh, and some interference with locomotion. Temperature varied between 99° and 101° F. After incision and use of autogenous vaccine the temperature rose to 104° on a few occasions throughout the course of treatment. The circumference of the right thigh was greater than that of the left. The tenderness was deep-seated. Over an area about 5½ in. from the outer aspect of the great trochanter of the femur, on the antero-lateral aspect of the thigh, it was thought that deep-seated fluctuation could be detected. The whole thigh gave a feeling of board-like stiffness, and on deep digital pressure hard nodular areas could be detected. The same condition was noted on the left side as well. The joints and bones appeared normal. There was no palpable evidence of the condition in the upper extremities. The Wassermann reaction and the Von Pirquet test were both negative. The urine was negative. The blood showed 70 per cent. Hb., 4,220,000 red corpuscles, 9800 leucocytes, with 73 per cent. polymorphonuclears. The X-ray report showed ossification of the musculature of both thighs extending upwards over the hips. Osteomyelitis and arthritis were absent. Calcareous deposits were shown around the scapula, in the pelvis and around both innominate bones. These deposits were also present around the right knee, the left knee and down the outer side of the left leg. It would be seen later that the deposits did not involve the muscles, but existed between the muscles.

Over the area mentioned above where there seemed to be fluctuation an incision was made and 5 oz. of thick creamy homogeneous pinkish substance was evacuated. Digital examination discovered gritty calcareous masses which proved to be calcium carbonate. There seemed to be involvement only of the fascia covering the muscles of the fibrous septa separating groups of muscles from each other, but the muscles themselves were not involved. The fluid was free of all organisms. The injected guinea-pig survived. At one time during treatment streptococci and staphylococci were found. The left thigh was also incised and curetted on three occasions.

In discussing the nature of the pathological process, Dr. Lowenburg said that the disease apparently started as a fasciitis which was accompanied by a more or less clear serous exudate. Leucocytic infiltration ensued. Absorption was now slowly inaugurated. Condensation, saturation, super-saturation and precipitation with deposition of lime-salts followed each other in orderly sequence as common physico-chemical phenomena.

Difficult Feeding Problem in an Infant.—Dr. Percival Nicholson. —The case showed the practical application of some principles of value in many difficult feeding cases.

(1) The use of large amounts of fluid to lesson the dehydration present. (2) The administration of a very weak food regardless of its caloric value, until the infant's powers of assimilation were established. (3) The use of relatively high protein feeding, with a gradual increase in the sugar and fat percentages, regulated by the child's digestive tolerance and gain in weight. (4) The use of soy bean gruel as a practical means of giving high protein feeding.

Disease of the Nervous System.—Dr. George Wilson.—The patient, a girl, aged 10 years, was admitted to the Nervous Dispensary of the University Hospital on February the 18th, 1918. At that time her mother said that the child had been nervous for a year and a-half, and that she was becoming unsteady on her feet, tripping and falling frequently. On one occasion she broke her arm. The patient did not have perfect control of the bladder. There was no history of pains, double vision or failing eyesight. The symptoms above related did not follow an acute infectious disease.

The patient was born at full term, and was the youngest of a family of five; the rest of them were healthy. Dr. Wilson examined the child immediately older than the patient, and found her normal. The mother of the patient has never had any miscarriages.

Physical examination: The pupils were equal, regular, and reacted well to light and in convergence. The eye-grounds and fields were normal. There was no nystagmus or speech disturbance, and the ocular and other cranial nerves were intact. The gait was ataxic and Romberg's sign was present. Ataxia was present in the upper extremities. All the deep reflexes were lost. Plantar stimulation produced plantar flexion. There was no Friedreich's toe, and no deformity of the foot.

The spine presented a well-marked kyphosis with slight lateral curvature to the left. Sensation in all its forms was intact. The lungs and heart were normal.

The blood Wassermann was delayed negative by the classical test and weakly positive by the modified method. The blood Wassermann in the mother was negative.

The diagnosis made was Friedreich's ataxia.

Several common physical findings of that disease were absent, *e.g.* the deformities of the toe and foot, nystagmus and a scanning speech. Friedreich's ataxia did not appear in full bloom all at once, and some of the missing signs might appear later.

Another diagnosis to be considered was juvenile tabes; repeated blood examinations and at least one examination of the spinal fluid would help. The patient has never had any pain and did not show an Argyll-Robertson pupil

Multiple Areas of Pigmentation in a Mother and Child.—Dr. Frank Crozer Knowles.—In 1911 he had reported before the American Dermatological Association an unusual case of pigmentation under the title of "Multiple Areas of Pigmentation, attacking chiefly the Trunk, of Eight Years' Duration, in a Girl of twelve years" ('Journ. Cut. Dis.,' 1912, abstracted in the British Journal of Children's Diseases, 1912, ix, p. 281).

A few months ago the patient, now twenty years of age, came to the Skin Clinic of the Pennsylvania Hospital, bringing her child, a boy, aged 3 years. The boy had fully fifty pigmented areas, varying from the palm of the hand to a split-pea in size, involving almost exclusively the trunk. These areas were becoming darker and were now of a yellowish-brown colour, non-elevated and resembling large freckles. The condition had started two and a-half years ago. The child was normal in every other respect.

The skin of both mother and child was fairly dark as they were Italians. Sections from the mother's skin showed that the only pathological change in the darkened areas was an increase in the number and the space occupied by the pigment-cells. There were no other children in the family, and apparently none of the antecedents had had the anomaly.

Abstracts from Current Literature.

Child Welfare.

Some practical points regarding child welfare organisation ('*Edin. Med. Journ.*,' 1917, I, *p.* 367).—**John Thomson,** in a general survey, deals with (1) the classification and organisation of child-welfare agencies; (2) the extreme importance of home visitation in connection with all out-patient work; (3) the staffing of child-welfare organisations; and (4) some child-welfare institutions which urgently require to be organised and developed in Edinburgh, namely—(*a*) children's dispensaries, (*b*) more convalescent accommodation, (*c*) more chronic hospitals or "cripples' homes," (*d*) an infants' hospital, and (*e*) an improved milk supply.

J. Allan.

Pædiatrics and child welfare ('*Edin. Med. Journ.*,' 1917, I, *p.* 361).—**A. Dingwall Fordyce,** recognising that the cause of pædiatrics is but one special branch of the cause of child welfare, epitomises suggestions for the cause as a whole as follows: Care of sick children:—(1) More thorough, systematic training of medical students: (*a*) Centralisation of education control in one hand; (*b*) the institution of a fully-equipped babies' hospital. (2) Greater facilities for efficient treatment: (*a*) the institution of a fully-equipped babies' hospital (as mentioned above); (*b*) special dispensary clinics throughout the city and the provision of safe milk; (*c*) greatly extended convalescent home accommodation. Preventive work among children:—(1) Diffusion of knowledge of the laws of health among parents, and facilities for trained advice and help at home: (*a*) the employment of thoroughly-trained health visitors, and such correlation of the work of various agencies as will render it possible for the number of visitors to the home to be considerably diminished; (*b*) the development of schools for mothers. (2) Greater facilities for retaining health: (*a*) Improved housing and lighting; (*b*) further development of open spaces, play centres, kindergartens, and day nurseries; (*c*) the provision of a pure milk supply for young children; (*d*) the institution of several small houses for unmarried mothers and their first illegitimate child; more stringent supervision of boarded-out children. (3) The further development of child welfare centres throughout the city, and consequently the extension of medical superintendence from periods of disease and convalescence to times of health. J. ALLAN.

Two child-welfare schemes ('*Edin. Med. Journ.*,' 1918, I, *p.* 26).—**G. H. G. Dundas** compares the child-welfare scheme in Ramsgate with that in Leith. In Ramsgate, educative methods are in predominance; in Leith, curative. In both boroughs the scheme had as its foundation the Notification of Births Act; the standard of one health visitor to every 500 births a year prevails; uniformity of teaching by members of the staff is emphasised; prenatal work is included in the scheme, as are also nursing mothers and children under five years of age; notified cases of measles and whooping-cough are visited—by the medical officer to the scheme if the case is notified by the mother, and by a health visitor if the case is notified by a doctor. No great hopes are entertained of preventing the spread of measles and whooping-cough by notification and visiting, but great hopes are entertained of preventing sequelæ and deaths. In Ramsgate the scheme is worked by a voluntary agency, but the Leith scheme is wholly municipal.
J. ALLAN.

Maternity and child-welfare work ('*Lancet*,' 1918, II, *p.* 1).—**A. Newsholme** deals with some aspects of maternity and child-welfare work. He refers to the infantile mortality in Durham, and discusses the unsatisfactory position in Durham and the causes of the excessive mortality there, and he notes the insanitary conditions calling for reform. The achievement of the sanitary minimum of healthy family life depends, in the first instance, on municipal and district sanitation and reasonably good housing. This implies convenient and labour-saving arrangements for personal and domestic cleanliness and for the storage of food. Among useful measures in welfare work may be mentioned the provision of "home-helps," maternity homes, and child-welfare centres, the proper organisation of nursing facilities, a good service of health visitors, etc. The assistance of non-official voluntary agencies should be welcomed. J. ALLAN.

Child welfare work in Massachusetts ('*New York Journ. State Med.*' 1919, XIX, *p.* 371).—**R. Smith** gives a *résumé* of the efforts at present being made for the conservation of child life in Massachusetts. With a view to enhancing the value of the work in the future he thinks that special attention should be given to the following: (*a*) Better co-ordination of the work of public officials and of local private organisations; (*b*) further development of public health nursing, with especial reference to child welfare in rural communities; and (*c*) constant stimulation by a central committee to keep standards of work high and beyond political control.
J. ALLAN.

Child-welfare work in South Africa ('*Med. Officer*,' 1920, XXIII, *p.* 203).—**Jasper Anderson** says that owing to the disastrous epidemic of influenza it was possible to consolidate all past public health legislation in one Act and to appoint a Minister of Health for Cape Town. Notification of births has to be made within six hours, as in this country. In Cape Town, among Europeans 11·5 per cent. of the infant deaths occur on the first day, 22·5 during the first week, and 32 per cent. during the first month—a striking contrast to the figures among the blacks, where the percentage is only 5·2 for the first day, 14·5 for the first week, and 26·6 for the first month, the subsequent high nergo mortality occurring at later periods. In Cape Town the percentage of still- to live-births among Europeans was 4·2, for coloured 6·6. The midwifery service in South Africa is inefficient and deficient, many qualified midwives taking up other work. There are 106 certified midwives and 166 untrained practitioners. Free medical attendance is provided if the midwife gets into difficulties. The midwives are inspected by a woman sanitary inspector. A woman cannot be employed in a factory for four weeks before her confinement or for eight weeks thereafter. CHRISTOPHER ROLLESTON.

Maternity and child welfare: the protection of motherhood (*'Journ. State Med.,'* 1919, XXVII, *p.* 271).—**F. H. Champneys** considers that antenatal care and the care of childhood cannot be separated from the subject of the protection of motherhood. Increased attention has lately been given to the systematic examination of pregnant women. In the case of the affluent the responsibility rests with the medical attendant, in the case of the poor generally with the midwife. The methods of securing a good service of midwives are discussed. J. ALLAN.

Motherhood (*'New York State Journ. Med.,'* 1919, XIX, *p.* 177).—**R. W. Lobenstine** emphasises the need of care of expectant mothers. No preventive work is more important in reducing infantile mortality. Could pre-natal care accomplish nothing more than to diminish the large number of still-births and premature births, it yet would be accomplishing enormous good. The three basic evils acting prejudicially on expectant mothers and young children are—(1) ignorance, (2) rum, and (3) ruthless industrialism. Remove the curse of alcohol and other factors, such as poverty, filth, ignorance, syphilis, and tuberculosis will, in a large measure, disappear.

J. ALLAN.

The maternity hospital and ante-natal centres (*'Brit. Med. Journ.,'* 1918, II, *p.* 33).—**C. Berkeley** discusses the agencies concerned with the preservation of the life and health of the pregnant and puerperal mother and her child under the following headings: (1) The workers—midwives, doctors, health visitors, voluntary workers, and the municipal authorities; (2) the pregnant woman herself; (3) the local centres—various associations set up in different parts of the kingdom, of the nature of ante-natal and post-natal maternity centres, child welfare, and baby welcomes, etc.; and (4) the consultative centre, including the maternity hospital (or beds set apart in general hospitals or infirmaries).

J. ALLAN.

Policy and organisation of maternity and child-welfare work (*'Public Health,'* 1920, XXXVIII, *p.* 123).—**Glew Davidson**.—Cases requiring only instruction on the part of the mothers are well provided for under existing arrangement. Treatment must be provided by the local authority, for the matter is too large to be dealt with either by existing voluntary hospital or at dispensaries. Thus at Bradford 11·64 per cent. of the 1606 infants examined were born in a state of malnutrition, 8·03 per cent. were born prematurely, and 36·55 per cent. were suffering from congenital syphilis. The housing accommodation is wretched, and therefore all ailing infants should be removed to a baby hospital. The existing children's hospitals cater for older children. Clinics should be scattered broadcast throughout the country, and stress should be laid on the preventive side of the work. Gastro-intestinal diseases should be prevented by supplying dried milk instead of the present diluted sewage. One c.c. of a whole milk as it comes from the farms contains 588,300 bacteria, 1 c.c. of dried milk only 2106. Other advantages are that dried tuberculous milk has only very slight powers of causing tuberculosis and that it keeps an indefinite time. CHRISTOPHER ROLLESTON.

Maternity and child welfare in Newcastle ('*Medical Officer,*' 1920, XXIII, *p.* 5).—**H. Kerr** says that the staff consists of twelve health visitors —all of them certified midwives and five of them trained nurses. Three midwives are subsidised by the Corporation, who also pays the fees of doctors called in by midwives. There are seven voluntary infant-welfare centres, three of which are also maternity centres, run at a cost of £750, towards which the Corporation contributes £250. Tea is provided for the mothers and milk for children up to five; advice only is given, but no treatment. The attendance varies from fifteen to fifty. The poorest mothers do not attend. Two day nurseries are also provided, towards which the Corporation contributes £100. More than half the deaths occur in the first month, and half of these are due to prematurity. There is no diminution in this drain upon infant life. In Newcastle the infant mortality rate for 1896–1900 was 179; in 1917, 113; since then there has been a rise. Infantile atrophy, debility and marasmus account for more than one-fifth of the deaths under one year. Some of these are due to maternal venereal disease, others to improper feeding. Dried milk is now distributed at cost price or free by the Corporation, and the results have been gratifying. The importance of good housing is demonstrated by the fact that in single-roomed homes the mortality is 148 per 1000, in three-roomed tenements only 108; again, in a well-to-do ward the mortality was only 45, in a poor one 150. The author concludes his papers by summarising the additional needs of his county borough as follows: (1) Additional health visitors; (2) maternity homes for homeless or baby-hounded mothers; (3) hotel accommodation for nursing mothers; (4) day nursery school; (5) ante-natal, dental and infant clinics; (6) hospital beds; (7) convalescent homes; (8) a whole-time female medical officer.

CHRISTOPHER ROLLESTON.

The nursery school as an administrative problem ('*School Hygiene,*' 1920, XI, *p.* 10).—**C. J. Thomas** describes the ideas of the Board of Education on those institutions which are to cater for the bodily, mental and social training of children between the ages of two and five years. The hours of attendance are 8.30 a.m. to 5 p.m. There must be ample provision for rest, sleep and meals. The schools must be on open-air lines and must be under medical, dental and nursing supervision. Twelve to fifteen feet of floor surface should be provided for each child, and the number of scholars should not exceed forty to fifty children, and should be staffed by a superintendent, an experienced assistant and a probationer. The nursing school is only required for a small number of children—*i.e.* those whose mothers go out to work and for those who are ill-nourished. Nursing schools can be either voluntary institutions or rate-supported institutions, and in either case they can be separate institutions or attached to existing elementary schools. The superintendent must be a trained teacher. Buildings of the bungalow type with verandahs and a large garden are essential. Bathrooms should be provided, and should be used by each child once a week. As epidemic diseases are so serious among the debilitated children attending nursing schools provision should be made to require the admission of all infected children to hospitals. The question of holidays is another difficulty, and has been solved in one or two instances by the staff taking their scholars away with them. The older girls from adjoining elementary schools should attend for practical instruction in mothercraft.

CHRISTOPHER ROLLESTON.

Nursery schools (‘*School Hygiene*,’ 1920, XI, *p.* 106).—**G. Hickling.**—So far public health authorities have concentrated their attention on infants and school children, leaving children of intermediate age severely alone at a period when rickets, otorrhœa and adenoids do most harm. The poor have no nurseries or gardens for children. Buildings of one story, cross-ventilated, and with hot-water pipes and guarded coal or gas fires should be provided. The floors should be covered with cork lino. An open-air shelter with low stretcher beds and coverings will be required as a rest room. The infants are taught to dress and wash themselves and to clean their teeth, but not reading, writing or arithmetic. Dancing and singing are encouraged, and puzzles and painting form part of the curriculum. These schools are especially suitable for children suffering from rickets, malnutrition, subacute rheumatism and discharging ears. One of the nurse attendants should be a masseuse. The danger of acquiring infectious diseases at an earlier and more dangerous period is acknowledged. The author concludes by advising the relegation of all children under seven to the nursery schools, and postponing the teaching of reading and writing till the age of seven years. CHRISTOPHER ROLLESTON.

The social care of the child (‘*Journ. State Med.*,’ 1919, XXVII, *No.* 10, *p.* 306.)—**Lady Leslie Mackenzie** says that the nation seems at last to have awakened to the fact that children ought normally to grow up into men and women. She comments on the fact that the Notification of Births (Extension) Act of 1915 has made it possible for all local authorities for public health to make what arrangements they see fit for attending to the health of expectant mothers, nursing mothers and children up to five years of age. She reviews the requirements in the highlands and islands of Scotland. Institutions are necessary. All resources must be mobilised: well-trained medical men and women, well-trained midwives and nurses, capable mothers in good homes. There are no true substitutes for mothers, but we must do the best we can to make up for maternal failure. The institutions are doing good work and they will do much more. But a fair-to-middling mother as a nurse is better than the most approved bottle and the most beautiful bassinette. J. ALLAN.

Exercise in early life (‘*Med. Press*,’ 1918, I, *p.* 143).—**E. M. Corner** emphasises the importance of sufficient exercise to the young. This exercise should take the form of games of recreation, in which refreshment the brain participates, rather than the form of a set lesson in the hands of a gymnasium instructor or drill sergeant. These latter modes of exercise are desirable at times, but they should be an addition to, rather than a substitute for, school games. He indicates the rational application of physical exercise for boys and girls, and he points to certain necessary restrictions if such exercise is to be undertaken without injury to health. J. ALLAN.

Home versus institutional treatment of young children ('*Lancet*,' 1919, I, *p.* 615).—**E. Pritchard,** in an address before the Child Study Society, said that there was a fairly uniform opinion among welfare societies that, splendid as had been the record of institutional treatment, no substitute had been found for the home. From his study of the children of the well-to-do classes he believed that the domination of the nurse had much to do with the mentality of their charges. This has led him to establish training schools for the trusted custodians of the children of the upper classes, and he thought training-schools might well be established for parents also. Examination of children of all classes, from infancy to school age, and of their home surroundings, had convinced him that the most important factor in character formation was the mother, and, in a lesser degree, the father. Housing conditions had much to do with bad training, but good houses did not necessarily make good parents. Some of the best mothers he had met lived under bad housing conditions, and some of the worst under good conditions. He next dealt with the bringing-up of children in an institution, and he concluded by urging that, in the interest of the State, schools for parents were as necessary as schools for mothers.

J. ALLAN.

Care of crippled children ('*Brit. Med. Journ.*,' 1920, I, *p.* 697).—**G. R. Gridleston** estimates that 10,000 beds are required for crippled children for the whole of England, but several in existing institutions could be utilised. Such accommodation would not be wasted, for 90 per cent. of cripples can be taught remunerative occupations, while of 1001 cripples in Birmingham only 111 were able to earn their living, the remainder having to be totally or partially supported out of the rates. Most of the children treated would be able to return to ordinary schools after a course at hospital schools, but a few would have to be provided with residential institutions. The hospital schools should contain 200 beds, and the staff should consist of two orthopædic surgeons, two house-surgeons, a physiotherapist and masseuses. The wards should face south, the south wall of each ward being replaced by pillars connected by stone canvas roller blinds. Each ward should have an annexe containing nurses' duty room for dressing and nurses' bathing room for cases on frames, a ward kitchen, bathroom and drying room. Wards for infectious cases and recovery rooms for children recently operated on should also be provided. The cost of maintenance of each child at Baschurch is £2 7*s.* 3½*d.*

CHRISTOPHER ROLLESTON.

The dull and backward: Is it possible to measure "general ability"? ('*Med. Off.*,' 1918, II, *p.* 5).—**J. Priestley** thinks that in any estimate of general ability the following factors should be noted: (1) Memory; (2) recollection; (3) interest or curiosity; (4) "scientific imagination"; (5) judgment; (6) a certain quickness of decision and of making up one's mind; (7) a degree of fearlessness or self-reliance in opinion. If these elements are the main factors of intellectual ability they are all in some degree measurable. Whether it is possible for the cleverest school inspector to make an estimate of a child's general ability after a twenty minutes' conversation is highly doubtful. The success of the testing would depend entirely on a serene atmosphere, and the mental atmosphere of a child is so easily disturbed by the presence of a stranger, and disturbed in such diverse ways, that all results obtained in such surroundings are suspect. But a child's teacher, having intimate converse with it over a period of months, and skilled to watch the manifestations of each separate element of ability as it shows itself in the complex operations of the child's mind, would certainly be able to give a useful opinion. With such guidance, supplemented by his own testing, a school inspector might make a serviceable estimate also. J. Allan.

Helping the backward child (*'New York State Journ. Med.,'* 1919, xix, *p.* 284).—**F. W. Barrows** points out that while mental defect always connotes backwardness the same is not true of physical defect. He pleads, for systematic school medical inspection. There should be no rivalry between the family doctor and the medical inspector of schools. On the contrary, every doctor should look on medical inspection as a factor in strengthening the influence of our profession throughout the community. He should avail himself of the opportunities for increased service which medical inspection brings to his very door. He should redouble his vigilance in the care of his little patients from infancy, in order to leave less for the medical inspector to discover and report on later on.

J. Allan.

The hygienic training of the school child (*'Lancet,'* 1918, i, *p.* 663).—**H. R. Kenwood** emphasises the need of social and scientific research and the importance of educating the community. He discusses the present position and the aims of training in hygiene. A scheme is formulated. Up to and including Standard III nothing more than the training by object-lessons and corrections is advocated, but in Standards IV and V in addition, the nature and importance of the laws of health should be simply and tellingly impressed in occasional short talks, which will never seek to do more than to produce a particular practical result in training. The ever-present aim would be to train and all efforts would be focussed on that. The ground covered by such a scheme should comprise—(*a*) training in formation of hygienic habits, including presentation of hygienic object-lessons: (*b*) simple statements upon elements of personal and domestic hygiene; (*c*) additional training for elder girls—the training in the duties of keeping the home (including food catering, marketing, and cooking, laundry-work, needlework, and care and management of children). The proper training of the teacher must not be overlooked. The author would make it compulsory upon all young females who attend the evening continuation schools to obtain at the same time a knowledge of infant hygiene and mothercraft. J. Allan.

Teaching and training on hygiene (*'Lancet,'* 1918, i, *p.* 727).—**H. R. Kenwood** says that the training of the health visitor should include elementary physiology, personal and domestic hygiene, applied especially to expectant mothers and children. The training is out of perspective and insufficiently practical. Many of the present workers have obtained no health visitor's certificate. As regards sick-nursing, four to six months as a probationer in a children's hospital is all that is required. Hospital-trained nurses acquire no experience in the hygiene of expectant and nursing mothers and the feeding of infants. The appointment of a health visitor is much of the nature of a lottery. It is necessary to have a person who is trained in official work for a year or two. The salary should be at least £100 per annum, and for the period of training, scholarships or grants should be available. Sixteen months should be the minimum period of training—twelve at a centre and four at a children's hospital as indicated above. For the last six of the twelve months the candidate should spend at least one-third of her time at a welfare centre, where she will assist at baby weighing, classes for mothers, and will visit at the homes accompanied by a highly experienced health visitor. An extra six months could well be spent in midwifery training or nursing in a fever or tuberculosis hospital. A model training institute should possess—(1) a day nursery for healthy babies and children up to five years of age; (2) two small wards for sick babies not ill enough for hospital treatment; (3) out-patient clinics for expectant mothers, infants and young children.

CHRISTOPHER ROLLESTON.

Otology, Rhinology and Laryngology.

Acute middle-ear infections in children from the standpoint of the pædiatrician ('*Journ. Amer. Med. Assoc.*,' 1920, LXXIV, *p.* 1222).—**L. E. la Fétra** states that among infants and children acute ear infections rank in number and importance only second to respiratory and gastro-intestinal disturbances. A bulging drum is the only diagnostic sign of middle-ear disease. It is only when the temperature is high, the pain acute and the bulging marked that La Fétra incises the drum at once. The infrequency of mastoid complications and the satisfactory results of conservative treatment are his justification for awaiting further indications than those of the day of onset. Paracentesis should be carried out under anæsthesia, preferably chloroform, unless the patient is an infant and only one drum has to be incised. The otitis complicating measles is far more likely to end in mastoiditis than is supposed, and is almost as serious as that complicating scarlet fever. Sinus thrombosis and labyrinthine disease have been excessively rare in the writer's experience. J. D. ROLLESTON.

Gonococcal otitis in infants ('*Deutsche med. Woch.*,' 1919, XLV, *p.* 1165).—**Putzig.**—Little attention has hitherto been paid to the occurrence of gonococci in the purulent discharge of suppurative otitis media in early infancy. In all the cases hitherto published the otitis had developed during or shortly after a typical ophthalmia neonatorum. Putzig now reports a case in which the otitis developed about two months after the cure of the ophthalmia, so that it can hardly be supposed that the gonococci, as in the other cases on record, had passed through the nasal duct into the throat and so into the ear. It was more probable that the otitis was due to the mother, who still had a specific vaginal discharge. As the otorrhœa proved to be very obstinate the possibility of gonococcal infection suggested itself, and on bacteriological examination typical gonococci were found in the ear discharge. Treatment with 1 per cent. protargol was instituted and rapid recovery took place. The case illustrates the necessity of making a bacteriological examination in all cases of obstinate otorrhœa in infants, especially in those who have previously suffered from ophthalmia, as specific treatment with protargol followed by potassium permanganate cures the otitis in a few days. J. D. Rolleston.

Notes on thirteen cases of aural tuberculosis in infants (*'Journ. of Laryngol., Rhinol., and Otol.,'* 1920, xxxv, *p.* 99).—**D. Guthrie.**—In all but one the disease appeared in the first year of life. All the cases, with one exception, were characterised by a painless, insidious onset, the presence of the discharge being the first sign of the disease. In three cases an abscess had formed and had ruptured through the skin, giving rise to a mastoid fistula. Facial paralysis was present in seven cases. Enlarged periotic glands were noted in every case. Guthrie has little doubt that the infection is milk-borne. Nine of the infants were bottle-fed on unboiled milk; bottle feeding with boiled milk was used in one case, breast milk in one case, and in two the mode of feeding was not noted. In nine cases the radical mastoid operation was performed, and the area of bone necrosed was very extensive. Four of the operated cases did well as regards the ear condition, though one died of pneumonia two years later. Three cases were fatal from one week to three months after the operation, probably from meningitis. Two of the unoperated cases died, and two are in better health, but with ears still moist.
J. D. Rolleston.

Douching the nose in children (*'New York Med. Journ.,'* 1919, cix, *p.* 942).—**Hitschler** begins by dropping adrenalin solution into each nasal fossa to contract the mucosa and allow a free passage. This should be done in the supine position. Then the child's head is bent well downwards and a soft rubber nasal douche holding ½ oz. or so is used for douching. This may be followed by application of oil to the nasal mucous membrane.
J. Porter Parkinson.

Delayed post-operative hæmorrhage following tonsil and adenoid removal (*'Med. Record,'* 1920, xcvii, *p.* 832).—**E. V. Hubbard** records a case in a girl, aged 8 years, with no family or personal history of hæmophilia, who on the tenth night after the operation was wakened up by a profuse gush of blood from the nose and mouth. The hæmorrhage continued in spite of applications of ice, hydrogen peroxide and adrenalin, but was checked by a post-nasal plug. The tonsil areas had entirely healed and the bleeding was exclusively from the naso-pharynx. Subsequent recovery was uneventful. J. D. Rolleston.

Tonsillectomy versus helio-electric methods (*'New York Med. Journ.,'* 1919, cix, *p.* 13).—**T. M. Stewart** shows (1) that tonsillectomy does not insure against future attacks of sore throat or other diseases for which it is done; (2) that tonsillar tissue is present in nearly half the cases after operation; (3) that helio-electric methods, fulguration, etc., do not accomplish more than cutting operations; (4) that badly-diseased tonsils should be enucleated unless contra-indicated by some unusual factor.
J. Porter Parkinson.

The care of children before and after tonsillectomy (*'New York State Journ. Med.,'* 1919, xix, *p.* 168).—**C. H. Smith** thinks that before advising that a child have an operation for enlarged tonsils it is important that his general condition should be taken into consideration as well as his throat. A careful history and examination of the child and of his urine and blood are necessary in order to rule out organic disease. It is desirable to try to improve the nutrition of markedly under-nourished children by rest and feeding for a few weeks before operating. The child should be prepared for tonsillectomy as carefully as for any operation. It is advisable that he should have calcium lactate, 5 to 15 grm. after each meal, for two days before the operation. Liquid petrolatum, containing $\frac{1}{5}$ to $\frac{3}{5}$ per cent. menthol (1 to 3 gr. to the ounce), should be dropped into the nose with a medicine dropper three times a day for several days. After the operation he is entitled to an anodyne, and should be kept in bed from five to seven days, with careful nursing and feeding. Preparations should be made to treat hæmorrhage. J. ALLAN.

The ætiology of arthritis deformans in children (*'Amer. Journ. Dis. Child.*, 1920, XIX, *p.* 87).—**A. H. Byfield** reports ten cases in children, aged from 1½ to 12 years, to illustrate the fact that arthritis deformans in children is chiefly due to infection situated in the tonsils and adenoids and accessory nasal sinuses. In children less than three years of age the portal of infection seems to be limited to the tonsils and adenoids. After this time their removal has no power to arrest the progress of the disease. A sinus infection should be suspected as an ætiological factor if after removal of the tonsils and adenoids the temperature still remains raised, the joint condition does not subside and there are leucocytosis and anorexia. The prognosis in uncomplicated cases is good as far as the arrest of the disease is concerned, but the deformity and functional disability may persist for a considerable time. Although orthopædic measures are helpful, the surgical treatment of the nasal sinuses is the most important therapeutic measure indicated. J. D. ROLLESTON.

Cicatricial stenosis of the larynx in children (*'Journ. de méd. de Bordeaux,'* 1920, XCI, *p.* 59).—**E. J. Moure** states that two forms of cicatricial laryngeal stenosis may occur in children. The first is the result of ulceration of the larynx following diphtheria, scarlet fever, and in rare cases typhoid. The second form, which is much the commonest, is the result of a tracheotomy made through the thyroid, the crico-thyroid space or the cricoid. In most of these cases laryngostomy, followed by clearing out the stenosed cavity, should not be carried out before the age of seven or eight years owing to the small size of the larynx and trachea in early childhood, the long duration of the treatment required and the gravity of the pulmonary complications which may occur during this period. If the stenosis is the result of a bad position of the tracheotomy tube, no attention need be paid to the larynx, and a cure will be almost always effected by placing the tube in the proper position. During the period that the larynx is becoming patent again care should be taken to prevent the formation of granulations about the tube by the use of the galvano-cautery or a 1 : 10 solution of zinc chloride. In no case should the tube be removed until the patency of the larynx has been established by laryngoscopic examination. The child should be trained to breathe through the natural channels by obstructing the tracheotomy tube first by day and then by night. J. D. ROLLESTON.

Foreign bodies in the food- and air-passages (*'Amer. Journ. Dis. Child.,'* 1920, XIX, *p.* 119).—**E. E. Graham** thinks that foreign bodies in the air- and food-passages are much commoner than was formerly supposed. The symptoms vary greatly. The peanut kernel immediately sets up severe laryngitis, tracheitis and bronchitis. The older child may survive the acute symptoms, but will be almost certain to develop pneumonia. Metal objects may remain in the lung for a very long time and do comparatively little damage. It is most important that a skiagram should be taken in every case of swallowing or inhaling a foreign body. When a foreign body does not cast a shadow on the plate, its position can be determined by making the child swallow a capsule filled with bismuth, when the X rays will show the location of the capsule held in position in the œsophagus by the foreign body. A foreign body may be suspected if the following conditions are present: Unexplained leucocytosis, localised symptoms in the lung which do not clear up under treatment, no tubercle bacilli in the sputum and a gradual failure in health and strength. An asthmatoid wheeze is a very important sign. Bronchoscopy, for which no anæsthetic is needed, should be performed as soon as possible after the entrance of the foreign body.

J. D. ROLLESTON.

Reviews.

La Faculté de Médecine de l'Université de Paris: Année Scolaire 1919–1920. 8vo, pp. 84, with illustrations. Paris: Masson et Cie. Price 1 franc net.

BRITISH medical students have always gone in tolerable numbers to Paris for purposes of study, and long may they continue to do so! The Medical Faculty of the University of Paris has recently re-organised its arrangements, enlarged its accommodation, reopened its cliniques and laboratories, and in fact made every preparation for receiving the ever-increasing number of home and foreign students it has to teach—in 1918 the round figures here were 3500 Frenchmen, 300 Frenchwomen, and nearly 800 foreigners. In the elegant brochure now under consideration Prof. Roger, Dean of the Faculty, has put together an account of what the prospective student most wants to know about this great school of medicine. Here will be found details of the hours and subjects of the courses of instruction, the new organisation of the clinical teaching in the thirty-five hospitals associated, the practical work that can be done, the revision classes, the holiday classes, the facilities for original work in the laboratories, the diplomas and certificates that may be obtained, the special arrangements made for strangers, and many other important matters. It is noted that not a few of the lecturers and clinicians named expound themselves in English as well as in French—a consideration that may serve to strengthen the weak knees of the many British medical men and medical students who fancy themselves dullards at foreign languages. The reputation of the Paris Faculty of Medicine is world-wide, and stands in no need of special commendation here. Prof. Roger's guide book thereto is an excellent piece of work, and should be in the hands of anyone who contemplates going to Paris in order to complete his medical education—a most tempting prospect!

A. J. J.-B.

JOHN COAKLEY LETTSOM AND THE FOUNDATION OF THE MEDICAL SOCIETY: being the Presidential Address delivered before the Medical Society of London on October the 8th, 1917. By Sir STCLAIR THOMSON, M.D., F.R.C.P., F.R.C.S., London: Harrison & Sons, 1918. Price 2s. 6d. net.

ONE cannot expect impartiality in a Presidential Address when the Founder of the Society is its subject, and consequently but few commemorative orations are of value to the critical biographer. In the pamphlet before us Sir StClair Thomson has painted a pleasing portrait of John Coakley Lettsom, the Quaker physician; but the picture suggests the partial pencil of Cosway rather than the bolder, blunt brush of Hogarth. From the historical standpoint we should have preferred the latter, but we are grateful to the author for his sketch, and especially for the plans of Grove Hill, and of the estates in America which once bore the names of Lettsom and Fothergill. One could have dispensed with the Appendix, containing notes on the lives of the Founders of the Medical Society, which have been printed elsewhere, and would have welcomed in their stead a pedigree with precise details of Lettsom's family (such as should accompany every biography), an account of his crusade against the quacks of his time, and a vindication, if possible, of his acceptation of a somewhat questionable expedient when threatened with an action for libel and £5000 damages—an incident which throws its shadow upon an otherwise unblemished perspective. We notice a misprint on p. 47, where "Queen Caroline" is an error for "Queen Charlotte," and take the opportunity of suggesting, in explanation of the presence of her bust on the first medal of the Society, that her patronage of the Lying-in Hospital, which still bears her name, had probably been extended to one of Lettsom's many philanthropic undertakings. The Queen's head would certainly not have been used without permission. Though he was not a genius, Lettsom was a remarkably successful man. By perseverance and hard work, aided by a very small capital, he acquired an enormous practice and a large fortune; and without something of the "greed of gain" which has been debited against him he would have been unable to give as he gave. His example is a good one for the generations to come, and Sir StClair Thomson's pamphlet should be read by everyone.

G. C. P.

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Original Articles.

REPORT OF A CASE OF ANTENATAL INTESTINAL OBSTRUCTION, WITH SOME REMARKS ON OTHER FORMS OF INTESTINAL OBSTRUCTION IN INFANTS.

By SYDNEY A. OWEN, M.D.Cantab.,
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and
NORMAN LAKE, F.R.C.S.,
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THE following case, owing to its comparative rarity and interesting clinical features, appears to us to be worth recording. The infant's mother (a patient in the City of London Maternity Hospital) was under the care of Mr. Comyns Berkeley, to whom we are indebted for permission to publish this record.

Mrs. C—, aged 34 years, 11-gravida, was delivered of a full-time female infant at 3 a.m. on February the 29th, 1920.

Obstetrical history.—Previous labours, 9 (date of last, January, 1919). Miscarriages, 1 (1909, at three months). Complications and interesting features connected with previous pregnancies and labours: (1) Pregnancies—triplets, full term 2 (1, ? fœtal ascites). (2) Labour, ninth, February, 1918, normal; child imperforate anus. Admitted to London Hospital: no operation; died a few days later. Labour, tenth, albuminuria (revealed and concealed ante-partum hæmorrhage; child stillborn; no post-mortem).

Details of this confinement.—Child born February the 29th at 3 a.m.; first vertex presentation; first stage 4 hours 30 minutes, second stage 30 minutes, third stage 15 minutes. Placenta 2 lb. 6 oz., expelled by expression, and intact. Œdema of fœtal surface. Hydramnios, five pints.

The child.—Full time, weight 8 lb. 1 oz.; cord 26 inches. Head measurements: Circumference, 14; O.F., 4¼; S.O.F., 4; S.O.B., 3½; V.M., 5; Bi.P., 3½; Bi.F., 2¾.

At birth the child was found to have marked abdominal distension, but otherwise appeared to be normal. The abdominal distension was not sufficient to complicate labour.

Progress of the case.—She was seen by one of us (S.A.O.), for the first time, at 2.30 p.m. on March the 1st, when the following notes were made:

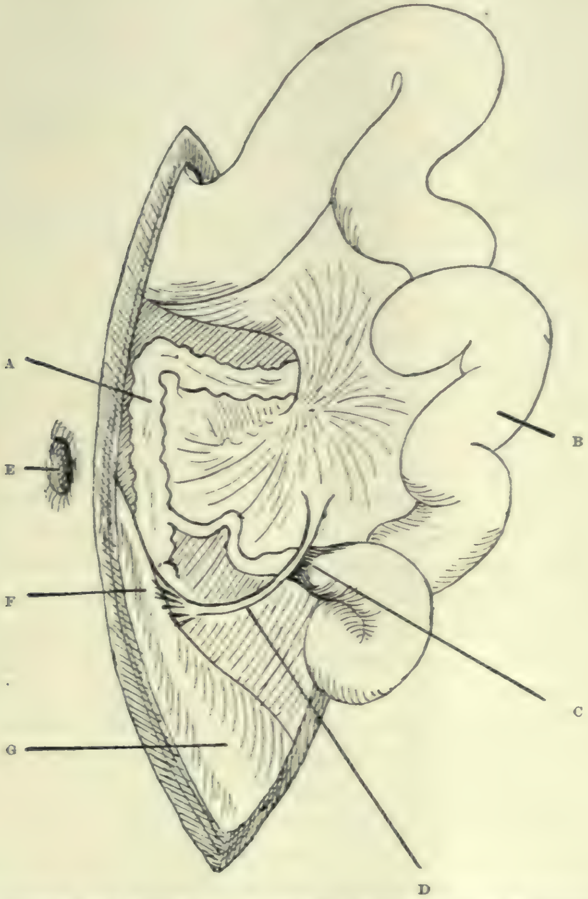
A well-nourished infant, who lies perfectly placid and is in no distress whatever. Temperature 95·8° F.; pulse and respirations normal: "Has vomited a greenish fluid, probably meconium, twice since birth, and the bowels have expelled a plug of mucus."

The tongue is furred. The abdomen is markedly distended. The superficial abdominal veins are conspicuous. There is visible peristalsis and distended coils of intestine can be felt. There is no evidence of free fluid in the abdomen. Heart and lungs normal. The child has passed urine naturally. No enlargement of liver or spleen. On rectal examination the anal canal and rectum are empty and the gut appears to end blindy at the limit of reach of the little finger.

Diagnosis.—Intestinal obstruction, due probably to atresia of the colon.

The child was immediately transferred to the Queen's Hospital for exploratory laparotomy, which was performed at 6 p.m. the same day. At a second rectal examination (N.L.) the anal canal and lower part of the rectum were found to be of about normal size. Just above the junction of the pelvic colon and rectum the calibre narrowed, so that the tip of the little finger jammed tight. On withdrawing the finger there was present a very tenacious, cream-coloured material, obviously the contents of large intestine minus bile-pigment.

Operation.—Mid-line incision, skirting the umbilicus. Enormous coils of small intestine, quite the size of the adult jejunum, escaped with a small quantity of clear fluid as soon as the peritoneum was opened. A rapid survey of the intestine showed the obstruction to be about one foot above the ileo-cæcal valve (see diagram), and due to a band arising from the mesentery and descending to the upper surface of the bladder, where it appeared to blend with the urachus and so passed up to the umbilicus. There is little doubt that it was the remains of the vitelline artery of the embryonic circulation coming as a branch from the superior mesenteric. There was no diverticulum of the bowel. Upon dividing the band the underlying portion of the bowel was found to have a linear band of gangrene, with mucosa exposed. This was over-sewn. Between this point and the ileo-cæcal valve the intestine gradually narrowed down and lost the meconium (bile) staining. The large intestine was entirely



A. Diminutive large intestine. B. Distended small intestine displaced to left. C. Linear band of gangrene. D. Strangulating band from mesentery to umbilicus. E. Umbilicus. F. Urachus. G. Bladder.

diminutive and cream-pink in colour, and as far as it could be determined it was patent. The most distended coil of small intestine was punctured and a large quantity of gas and meconium liberated. The puncture was over-sewn. The abdomen was sewn up without drainage with through-and-through fishing-gut sutures.

The child stood the operation well, but a few hours later definitely fæcal vomiting set in and continued up to the time of death, which occurred on March the 2nd in the early hours of the morning.

Only a partial post-mortem examination was allowed. It was ascertained beyond doubt that the entire gut below the site of obstruction was pervious.

Remarks.—(*a*) *From the obstetrical standpoint* the case is interesting, the association of hydramnios with fœtal abnormalities being well known. The degree of distension was not sufficient to obstruct labour—a complication which occasionally is met with in these cases. From the state of the bowel found at operation it is easy to understand how rough manipulations during labour or deep palpation of the abdomen after birth would be accompanied by rupture and peritonitis.

(*b*) *From the medical standpoint* the case presents several features of interest : (1) Though of rare occurrence, this type of case is well known. (2) The intestinal obstruction must have occurred *in utero*, the child being born with signs of obstruction, *i. e.* great abdominal distension, whilst the symptoms of obstruction rapidly manifested themselves by vomiting and the absence of the normal bowel movements. How long the obstruction antedated birth it is impossible to say. Had delivery been delayed a few more hours, would spontaneous rupture of the bowel have occurred ? The etiology of this case is not a mystery. (3) The well-being of the child, even when seen thirty-six hours after delivery, was remarkable. It would appear that even acute intestinal obstruction in the child's prenatal existence need not be accompanied by symptoms. (4) It seems to support the view that the vigorous peristaltic movements of the bowel commence only after birth. (5) Had spontaneous rupture, followed by peritonitis and the concomitant accumulation of free fluid, occurred prior to birth, the diagnosis of fœtal ascites would have been made in all probability and with justification, the association of hydramnios and fœtal ascites being not so very uncommon.

(*c*) *From the surgical standpoint* the chance of a successful issue in such cases is very remote, for the inactivity of the diminutive undeveloped large intestine can probably not be overcome, and so a condition of relative obstruction remains even after division of the band. A mere enterostomy (itself a serious operation in a newly-born child), while relieving the immediate urgency, would be no more successful, as it would relieve the colon of all functional activity and so of its one chance of developing.

The literature relating to defects of the intestine—anatomical, congenital or pathological—is voluminous. The following references, of more recent date, to the writings of others may be interesting to the readers of this Journal.

(1) Blacker and Birnbaum ('Malformations and Congenital Diseases of the Fœtus,' 1912, p. 167). Complete absence of the intestine is very rare. Grave defects of the intestine have nearly always been associated with other severe malformations. Doubling of one portion occurs very rarely.

Partial defects are commoner, *e. g.* the vermiform appendix may be absent, or the continuity of the intestine may be interrupted for a longer or shorter distance. In David's case the child died three days after birth with symptoms of acute ileus. At the post-mortem there was complete occlusion of the descending colon and the greatly distended colon had perforated in the region of the cæcum. Completely separated portions of intestine have been found in umbilical hernia, with corresponding defects in the bowel. (Tillmanns quotes a case observed by Ahlfeld.)

Congenital contractions, stenoses, occlusions, atresiæ of the intestine are very uncommon (atresia ani, of course, excepted). They are most frequent in the duodenum where the bile-duct and duct of Wirsung enter or at the union of duodenum and jejunum.

Occlusion is commoner than stenosis. Cordes records 57 cases—48 of occlusion and 9 of stenosis. Ducros collected 3 cases of stenosis, 5 of obliteration of the lumen and 3 of complete interruption at the point of union of duodenum and jejunum. Voron, among others, records a case of congenital atresia of the duodenum. The child died on the fourth day. A few minutes after beginning to suck the child invariably vomited unaltered and non-coagulated milk without any bile. At the post-mortem occlusion of the duodenum was found. The lower end of the upper blind sac became lost in the tissues at the head of the pancreas. The bile and pancreatic secretions entered into the lower sac.

Kuliga records a case of hour-glass stomach with multiple stenoses of the small intestine. In the ileum the commonest situation is just above the ileo-cæcal valve, or at a point corresponding to the origin of the omphalo-mesenteric duct. The occlusion is generally of a membranous, septum-like character.

In a case described by Nijhoff delivery was difficult owing to the great distension of the abdomen, associated with perforation of the intestine and escape of meconium into the abdominal cavity which had occurred before birth.

Congenital stenosis and atresiæ of the large intestine are most common in the region of the sigmoid flexure. In Brindeau and Moncany's case the transverse colon was stenosed for a length of 15 cm. The symptoms of ileus were present and an artificial anus was made. The child died forty-eight hours after operation.

Jeannin and Cathala record a case in a newborn child of complete atresia of the colon. The bowel had perforated.

(2) George Waugh ('Lancet,' 1912, i, p. 427) records a case of successful enterectomy, under spinal anæsthesia, for acute ileus in an infant twenty-four hours old. The obstruction occurred in a congenital hernia of the cord. The sac, the size of a child's head, with a narrow pedicle at the umbilicus, contained several coils of small intestine adhering by a short Meckel's diverticulum to the apex of the sac. Six inches of intestine were resected and a lateral anastomosis performed. The child made a satisfactory recovery, but died one month later of marasmus.

(3) "Congenital Intestinal Atresia," H. S. Clogg ('Lancet,' 1904, p. 1770). This author records two cases. (*a*) A female infant, six days old, was born with a prominent navel. Since birth nothing had been passed *per rectum*. Vomiting commenced shortly after birth and persisted, latterly becoming dark brown and very offensive. On examination a congenital umbilical hernia, about 3 in. in diameter, was found to be present. At the operation the intestine was found to end blindly in the sac. The large intestine commenced again just below the hepatic flexure of the colon. (*b*) In a male infant, aged 4 days, atresia of the small intestine was found. The child commenced to vomit shortly after birth and the vomit became very offensive. The abdomen was distended and nothing had been passed *per rectum*. At the operation the lower end of the ileum ended blindly, and was continued on as an impervious cord, about ½ in. in length, into a much contracted large intestine. The obstruction was about 2 in. above the cæcum. Death occurred a few hours after operation. No post-mortem was obtained.

This paper deals very fully with similar conditions and contains thirty-two references to the literature :

(4) "Congenital Intestinal Obstruction," N. T. Spriggs ('Lancet,' 1910, i, p. 94). This author gives details of seven cases and gives twenty-two references to the literature.

Case 1.—A septum in the ileum in an infant, aged 5 days. The post-mortem examination showed a complete septum a few inches above the ileo-cæcal valve. It was covered by mucous membrane on either side. All the gut below was contracted and very small. There was no meconium below the obstruction.

Case 2.—In an infant, aged 1 day, the small intestine at the post-mortem ended blindly 29 in. below the pylorus. There was no other abnormality. Laparotomy had been performed and the child lived ten days.

Case 3.—In an infant, aged 4 days, the post-mortem revealed an ileum which terminated abruptly ¾ in. above the cæcum.

Case 4.—In an infant, aged 4 days, there was atresia of the bowel (ileum) 39 in. below the pylorus.

Case 5.—In an infant, aged 5 days, there were multiple atresiæ of the jejuno-ileum. Reference is made to a similar case reported by Emanuel (British Journal of Children's Diseases, 1905, ii, p. 457).

Case 6.—Atresia of the duodenum in an infant, aged 3 weeks, who died on the day of admission to hospital. There was a history of vomiting since birth, about ten minutes after food, and of progressive wasting. The vomit was considerable in quantity, with much green mucus. The bowels had acted, only meconium being passed. At the post-mortem the duodenum ended abruptly at the point of entry of the bile-duct. The stricture was complete.

Case 7.—In an infant, aged 39 hours, where laparotomy was performed and a Paul's tube only inserted, the obstruction was due to an abnormal arrangement of the mesentery.

The post-mortem showed : "The mesentery was absent from the last 1½ in. of the ileum and this and all the large intestine were retro-peritoneal."

(5) *Volvulus of the entire small intestine* is rare. J. Hutchinson, Jun. ('Clinical Journal,' 1907, xxx, p. 113), in a paper entitled "On Volvulus of the Entire Small Intestine, Cæcum and Ascending Colon," refers to two cases occurring in infants.

Case 1.—Infant, aged 4 days (Epstein-Soyka, 'Präger med. Wchnschr.,' 1878). The symptoms in this case were constant vomiting, with blood mixed with fluid stools. The upper part of the abdomen was much distended, and obstructed coils of intestine could be felt beneath the abdominal wall. Post-mortem : "A complete volvulus had occurred from right to left. . . . The cæcum and ascending colon had their mesentery continuous with that of the small intestine."

CASE 2.—Infant, aged 19 days (Pescatore, 'Deutsche Zeitschr. f. Chir.,' Bd. lxviii). At the post-mortem a balloon-like viscus was found just below the ensiform cartilage. This was an abnormally distended duodenum which contained five times as much fluid as the stomach. Below the duodenum a complete axial rotation of the small intestine had occurred one and a-half times from right to left.

Remarks (Hutchinson).—The invariable condition for a complete volvulus is the floating condition of the cæcum and ascending colon. This is due to congenital arrest of development (Legueu, 8 per cent. infants; Tuffier, 2 per cent. adults; Wandel, 10 per cent.).

(6) Intestinal obstruction, due to Meckel's diverticulum in one or other of its forms, is perhaps one of the commoner forms met with in patients at any age. An illuminating paper has been written by Daniel N. Eisendrath on this subject, entitled "Ileus due to Meckel's Diverticulum" ('Annals of Surgery,' 1909, l, p. 1278).

This writer discusses at length the causes, types and anatomy of Meckel's diverticulum.

The persistence of the umbilical vessels in connection with Meckel's diverticulum is of particular interest in relation to the case here reported. Eisendrath classifies the varieties as follows (*vide* 'Medical Annual,' 1911, p. 400): (1) A complete canal opening at the umbilicus at one end and into the ileum at the other—comparatively rare. (2) A canal opening at the umbilicus, but ending blindly at a variable distance within the abdominal cavity. (3) An intermediate portion of the duct remains, having no communication externally at the umbilicus or internally into the gut, but forming a cystoma due to retention of secretion. Such a cystoma may have a ligament attaching it to the gut. (4) The tube is limited to the proximal end of the canal opening into the ileum. (The condition first described by Meckel in 1812.) (5) The cord containing the umbilical vessels may persist as an independent structure and be attached to the umbilicus separately. This vascular cord may either take an independent course, or the vessels may run along the free border of the mesenteriolum of the diverticulum, or finally they may run from the tip of the diverticulum and form a cord, commonly known as the terminal ligament. . . . The normal point of fixation of the diverticulum or its terminal ligament is at the umbilicus. The frequency of this attachment to the umbilicus varies. (6) The diverticulum may be either absent or very rudimentary, and the only evidence of the presence of a congenital condition be a cord (containing umbilical vessels or traces of them) extending from the mesentery to the umbilicus.

This is the type which appears to resemble most closely the condition found in our patient.

Some of the difficulties encountered in the diagnosis of intestinal obstruction, actual or suspected, are well illustrated in the following series of cases, hitherto unpublished, which have come under the observation of one of us (S.A.O.).

Case 1: *Summary.*—Severe toxæmia, of unknown origin, simulating duodenal obstruction in an infant, aged 5 days. Laparotomy; death.

History.—Born healthy. Since birth has vomited everything a few minutes after taking it. Bowels have acted twice, but meconium only passed.

On examination.—A fairly well-nourished, fully-developed infant. Slight, but generalised, icteroid tinge. No signs of collapse, but the abdomen is distended. No peristalsis seen, and no mass felt. Rectal examination negative. Slight fever (100° F.).

Exploratory laparotomy.—Stomach large; all the rest of the intestines collapsed and very small. The duodenum (second part) appeared to be stenosed.

After operation.—Patient became more jaundiced and developed hæmorrhages into the skin and mucous membrane. Died twenty-four hours later.

Post-mortem.—Hæmorrhage into the peritoneum; purpuric extravasations under liver-capsule. All organs appear macroscopically healthy. No organic change in the duodenum.

Case 2: *Summary.*—A case of persistent vomiting in a male infant, aged 10 weeks; post-mortem a peritoneal band which occludes the duodenum near its lower end.

History.—November the 17th: The child has been vomiting for the last three weeks and losing weight for five. Occasionally vomiting is in relation to time of taking food. Sometimes he appears to vomit much more than he takes. At other times he vomits two or three hours after taking the breast.

Present state.—November the 17th. Thin, wasted, ill; tongue furred. Heart and lungs negative. There is no visible peristalsis. The pylorus cannot be felt. Liver palpable. Spleen not felt. The abdomen is soft and not at all distended. No tenderness. November the 17th: Vomited seven times. November the 18th: Vomited seven times (bile-stained fluid several times). Weight, 7 lb. November the 19th: Vomited nine times, occasionally immediately after feeding, at others after one hour or more; is very collapsed. November the 20th: No vomiting. November the 21st: Vomited three times. Weight, 7 lb. 3 oz. November the 22nd: Very ill and collapsed. Vomited five times. November the 23rd: Vomited eight times. November the 24th: Did not vomit. November the 25th: Vomited three times. Weight, 6 lb. 15 oz. November the 26th: Vomited twice. November the 27th: Temperature, 93·8° F. (rectal). Very pale and collapsed. Pulse very feeble. Vomited once. Fontanelle depressed. November the 28th: Slight peristalsis noticed for the first time. The patient died during the night. Temperature throughout for the most part subnormal (mostly 96°–98° F.; on two occasions 93·8° and 94·2° F.). Pulse, 96–156; respirations, 28–56. Bowels acted daily, one to four times.

Permission to perform exploratory laparotomy was refused, and considering the general condition of the child was not insisted upon. Under the existing conditions it was impossible to carry out a bismuth meal.

Post-mortem.—A peritoneal band (? acquired or congenital) was found to be blocking the lower end of the duodenum. The duodenum was almost as large as the stomach. Nothing else abnormal was found.

CASE 3: *Summary.*—A case of partial volvulus of the small intestine in a male infant, aged 5 weeks.

History.—Taken ill June the 17th with vomiting. No action of the bowels. Had been fed on Glaxo. Family history negative. When first seen, June the 20th, the child was very ill, with earthy colour and abdominal aspect, sunken eyes, and depressed fontanelle. He cries continuously as if in pain. Abdomen is distended and tense, the percussion note resonant all over. Heart and lungs are normal. The neck muscles are rigid with variable rigidity of the lower limbs. Kernig's sign is positive. Plantar response is of the infantile type. Lumbar puncture; nothing abnormal. Later the child vomited a large amount of brown, almost fæcal material. Temperature, 99·2° F.; pulse, 136; respirations, 56. Laparotomy was contemplated, but owing to the child's desperate condition was not performed. The child died on the 21st.

Post-mortem.—Volvulus of small intestine near the ileo-cæcal junction. It involves 1½ in. of bowel. The affected bowel is purplish, the coils being matted together by recent adhesions. Small intestine large and full of gas. Large intestine empty.

CASE 4: *Summary.*—A case of intestinal obstruction in a male infant 5 weeks old, due to a large hæmorrhage into the wall of the gut. Streptococcal peritonitis. Laparotomy; death.

History.—A full-term breast-fed child, 6½ lb. at birth. On June the 3rd noted "to be queer." "Eyes rolled," but no convulsions. On June the 5th condition changed. He passed a hard, yellow motion in the evening and seemed to be in much pain. For the last twenty-four hours mother has noticed distension of abdomen. There has been no action of the bowels since the evening of the 5th. Has only vomited once. Bowels opened twice daily until the 5th and motions said to be normal. He takes the breast well despite his condition.

Present state.—Middle day, June the 6th, very ill, face drawn and pinched. Heart and lungs normal. Abdomen much distended, rigid, no movement. Dulness in the flanks. Rectal examination, *nil.* Temperature 98° F.; pulse, 160; respirations, 40.

Exploratory laparotomy.—Midline incision. A large amount of thin, green, yellow, flaky pus. All the intestines purplish. One large hæmorrhagic looking area was discovered in the wall of the lower end of small intestine. This was tense and immobile, and on incising the peritoneal coat of the gut was found to be a large clot in the wall of the bowel which had completely obstructed the intestine. The clot was evacuated and the peritoneum repaired. Toilet of peritoneum with drainage. During the operation the child vomited a large amount of dark material with fæcal odour. The child died the same night.

Post-mortem.—General peritonitis (cultures showed *Streptococcus fæcalis*). In addition to the one massive hæmorrhage obstructing the gut-wall found at operation there were four others of a similar character though smaller in size.

Case 5: *Summary.*—A case of torsion of the left ovarian pedicle in a femoral hernia in a female infant, aged 6 months. Operation; recovery.

History.—First seen December the 8th. At 7 a.m., December the 6th, mother noticed a small lump, the size of a hazel nut, in the left groin, which she could not reduce. The lump increased in size. The child had been poorly for the last two days and cried continuously. For two nights prior to the lump being noted the baby had been restless. Bowels acted on the 6th, 7th, 8th, normal motions. Only vomited once on the 7th.

Past history.—Has had a rupture three months, which "comes and goes." Until now this could always be reduced. This rupture seemed higher in the groin than the present lump. The child had a severe cough with much straining one month ago. Her health has never been really satisfactory since birth. Nine other children. No features of clinical interest.

Present state.—When first seen temperature 101° F.; pulse rapid, regular. The child is pale and puny and cries continuously. There is a mass, the size of a small pigeon's egg, in the left inguino-femoral region. It invades the left labium. It is almost impossible to say whether it is primarily inguinal or femoral. It is mobile and apparently can be partially reduced. There is no fluctuation. The overlying skin is normal. An attempt to reduce under an anæsthetic failed.

Operation.—Sir Cuthbert Wallace (December the 8th).—Torsion of the left ovarian pedicle was found. The ovary itself was a dark purplish-red colour with glistening surface. There was no evidence of gangrene. The ovary with its pedicle was amputated close to the uterus. The femoral sac contained no bowel. The femoral canal was repaired. The child stood the operation well and made an uninterrupted recovery.

I am much indebted to Sir Cuthbert Wallace for permission to publish this case.

HEREDITARY SYPHILITIC AORTITIS.

By E. J. Stolkind, M.D.

The question of hereditary syphilitic aortitis has not only a theoretical but also a practical interest. But so far many questions await answer, and further investigations are necessary. Recent researches, especially the discovery of *Spirochæta pallida* and the careful pathological study of the cases of aortitis, have thrown much light on this subject.

Spirochætæ pallidæ in the blood-vessels and heart have been found in many cases of hereditary syphilis in prematurely born and still-born infants, as well as in those who died soon after birth.

For example, Ranke found *Spirochætæ pallidæ* in the cerebral blood-vessels and in the brain in nine out of twelve cases examined by him. In the blood-vessels and the heart they were found by Rach and Wiesner in four newborn (in the smallest vessels); by Rebaudi in five fœtuses (in all the coats of the aorta and very often in the vasa vasorum); by Frohwein in three prematurely born (very few in the aorta and very many in the liver); by Buschke and Fischer in a three weeks old baby (in some blood-vessels and in the heart, in which interstitial myocarditis was noticed); by Cesa-Bianchi in twenty cases (in the large vessels, heart muscle and in the blood); by

Sabrazes and Dupérié in a ten days old infant (in the aorta, myocardium and pulmonary artery); by Landouzy and Laederich in an infant, aged 10 weeks (in the suprarenal glands and in the cutaneous eruption); by Warthin and Snyder in two infants, aged 2 months and 8 days respectively (in the myocardium); by Simmonds in thirteen cases; by Mallory and others.

So far I have not been able to find in the literature any cases in which *Spirochætæ pallidæ* have been found in the aorta of children with hereditary syphilis, aged more than one year. It may be noticed here that some authors, such as Reuter, Wright, Richardson, Mallory, Warthin, Schmorl and Longcope, have reported cases of aortitis in adults with acquired syphilis in which cases they discovered *Spirochætæ pallidæ* in the wall of the aorta.

Thus, this point—the presence of *Spirochætæ pallidæ* in the wall of the aorta of children with hereditary syphilis aged more than one year—needs further investigation.

The same applies to the pathological lesions in the aorta in cases of hereditary syphilis. Barlow (1877) was one of the first English authors who described syphilitic changes in the blood-vessels in hereditary syphilis (a case of choroiditis and arteritis of the cerebral vessels in an infant of nearly seven months old).

Similar cases were also described by Schütz (in a fœtus); by Chiari (endarteritis in an infant, aged 15 months); by Fournier, Comby, Marchiafava and others.

Fenomenov, Durante, Sanné and others have described cases of aneurysm of the aorta in the fœtus. Mracek in his monograph reported twenty-four cases of syphilitic changes in the heart of the newborn. In only one of these cases lesions were found in the aorta.

Pathological changes in the aorta, large vessels and pulmonary artery in newborn infants with hereditary syphilis have been described by Wiesner and Rach, as well as by Wiesner (37 cases); by Bruhns (9 cases); Klotz, Waterman (1 case each); Rebaudi (13 cases); Lévy-Franckel (5 cases); Cesa-Bianchi, Debove and Trémolières, Hennig, Haselbach and others.

The morbid changes of the large blood-vessels in fœtuses and stillborn generally consist in the formation of cellular infiltrations in the media, and partly in the adventitia and in hyperæmia of the vasa vasorum. In infants who had lived some weeks there was found a partial or complete obliteration of the vasa vasorum in the media and adventitia and a growth of interstitial tissue. The infiltrations consisted of lymphocytes, of mononuclear and polynuclear leucocytes, epithelioid cells and interstitial tissue.

According to Rach, Wiesner and others, these pathological changes are specific and produced by syphilitic infection, which generally causes early death.

Contrary to the opinion of these authors, Thorel and Scharpff, after examination of four syphilitic fœtuses, in which they had not found the same pathological changes, came to the conclusion that such vascular lesions are not specific of hereditary syphilis.

Thus writers so far are not agreed as to the typical pathological changes of hereditary syphilis in the aorta of fœtuses and newborn infants, and this question needs further investigation. On the other hand the lesions of syphilitic aortitis in adolescents and adults are characteristic.

Of greater practical interest for every physician is the question, if hereditary syphilitic aortitis really exists in older children, adolescents, and especially in adults, is it possible to diagnose it clinically ?

As such cases are described in literature, many authors now admit the existence of such cases (" aortisme héréditaire " of Huchard and others).

But so far none of the cases described as hereditary syphilitic aortitis in older children, adolescents and adults has been proved. Every physician who has observed cases of syphilitic aortitis, with a subsequent autopsy, knows how difficult it is to diagnose it clinically, and especially syphilitic aortitis or aortic regurgitation or stenosis due to hereditary syphilis.

In one of my cases, a child, aged 10 years, with aortic stenosis, the heart disease was diagnosed in infancy.

The mother gave a history of two abortions. There was a suspicion of congenital heart disease of syphilitic origin, but at the autopsy no signs of syphilitic aortitis, etc., were found.

Another case of ours, illustrating the difficulty in the diagnosis, may be quoted here. The patient was a girl, aged 14 years. On examination Hutchinson's teeth, syphilitic ulcers on the left leg and abdomen, ascites, enlarged liver and aortic regurgitation were found. The Wassermann reaction was repeatedly positive. The urine contained albumin, hyaline and granular casts. There was a history of chorea some years ago. Clinically, on account of the presence of syphilitic ulcers, and especially of Hutchinson's teeth, hereditary syphilitic disease of the heart and of the aortic valves could not be excluded. It might be also a case of mixed infection—(1) syphilitic, and (2) endocarditis after chorea. But the autopsy, made by Dr. E. Fraenkel, showed that macroscopically there were no signs of syphilitic disease of the circulatory system or of hereditary syphilis of the viscera. It was a case of sero-fibrinous pericarditis and verrucose endocarditis of the aortic and mitral valves (in all probability after chorea). It may be mentioned here that the Hutchinson's teeth have been found not only in hereditary syphilis, but also in rickets, and especially in infants infected with syphilis in the first months of life by wet-nurses, relatives, etc. (Campbell, Heubner, Hochsinger, Welander and others). In one of my cases at Moscow of syphilis in a suckling with chancre on the lip, the baby was infected by an officer, who had kissed him; afterwards the mother was infected (chancre on the nipple).

As regards the positive Wassermann reaction in cases of aortic regurgitation, or those with a suspicion of aortitis or with myocarditis, etc., it does not prove that the disease of the aorta, heart, etc., is of syphilitic origin. Besides, in our cases of syphilitic aortitis in which a post-mortem examination was made by Dr. E. Fraenkel, some of the patients had suffered previously with syphilis and articular rheumatism, and the autopsy showed either (1) syphilitic aortitis alone or with subsequent aortic regurgitation, (2) lesions typical only of endocarditis following acute infectious diseases, or (3) lesions typical of both of these two groups. The following case of ours should illustrate the last group, as well as how necessary it is to be cautious with the diagnosis in cases of syphilitic aortitis and aortic regurgitation. The patient was a man, aged 41 years. His mother was probably infected with syphilis, as she had eleven children, of whom seven were stillborn or died soon after birth. The patient himself gave a history of syphilitic infection at the age of about twenty-one years, and of articular rheumatism at the age of twenty-eight years. After rheumatic fever he began to suffer from palpitation. In the last two and a-half months of life he developed symptoms of failure of compensation, aortitis and aortic regurgitation, nephritis, asthmatic attacks and incipient tabes. The autopsy, made by Dr. E. Fraenkel, showed syphilitic aortitis with subsequent aortic regurgitation, verrucose endocarditis of the mitral valve with subsequent stenosis, obliteration of the pericardium, etc.

Thus in this case the wall of the aorta and the aortic valves showed typical syphilitic lesions, whilst the mitral valve was involved by another infection (rheumatic fever).

This patient had a history of syphilitic infection, otherwise, following the example of some authors who describe cases of hereditary syphilitic aortitis in adolescents and adults (*vide infra*), we could regard it as a case of hereditary syphilitic aortitis.

I will briefly mention here the cases of aortitis on record which have been described as of hereditary syphilitic origin.

Wilson and Marcy reported a case of ruptured aneurysm of the ascending and transverse arch of the aorta with stenosis of the aortic valve in a child aged 4 years. The aorta outside the valve showed extensive layers and patches of atheroma, and the aortic wall was very thick. The authors thought that the aneurysm was due to latent hereditary syphilis, but the parents denied syphilitic infection. No cicatricial inflammatory process typical of syphilitic aortitis or other specific signs were found, and all the signs described were inconclusive.

In the case of Landois in a girl, aged 6 years, syphilitic endocarditis was found at the autopsy. But it might have developed after birth, the more so as at the post-mortem of the girl's mother and her brother no signs of syphilitic infection were noticed. The aorta showed nothing abnormal.

Hochsinger states that he observed aortitis in two congenital syphilitic children, aged 8 and 12 years respectively, but does not give any details of his cases.

I was unable to find the original paper (in Danish) of Lauritz-Melchior, who described three cases of syphilitic aortitis.

Nixon described a case of aneurysm of the abdominal aorta in a girl, aged 20 years, whose mother died from pulmonary tuberculosis. At the autopsy a rupture of the abdominal aorta, syphilitic aortitis, etc., were found. The only proof in this case that there was hereditary syphilis with hereditary syphilitic aortitis were the so-called Hutchinson's teeth. But, as was mentioned above, they may also occur in rickets as well as in syphilis acquired in infancy. Thus this is not a proved case of abdominal aneurysm caused by congenital syphilis as the author thinks.

Marchand demonstrated a specimen of syphilitic aortitis in a woman, aged 28 years, whose father had died from general paralysis. The patient herself denied syphilitic infection. There is no proof at all that it was a case of hereditary syphilis as the author supposed. Syphilitic parents may give birth to healthy children who afterwards can be infected with syphilis.

In nearly all the other cases described under the name of hereditary syphilitic aortitis no autopsy was made (Buchta, Stadler, Lippmann and others).

Specially doubtful are the cases of hereditary syphilitic aortitis described by A. Fournier, Chiray and Seguard, Biermann, Neugebauer and others.

Thus Fournier reported a case of aortic regurgitation due to hereditary syphilis in a man, aged 40 years. There was a history that his mother had had twelve children of whom eight died. At the age of six years the patient had had some ulcers on the legs. At the age of twenty-eight no signs of heart disease were found. Antisyphilitic treatment was followed by improvement. No other proofs were given that it was a case of aortic regurgitation due to syphilitic aortitis, *i. e.* of arterial and not of endocardial origin after an infectious disease. There was no autopsy.

In the case of Chiray and Ségard's case of aortic aneurysm due to hereditary syphilis, the patient, aged 50 years, denied syphilitic infection. There was also no autopsy, and the diagnosis was based chiefly on the history. But if we maintain that in adults who deny syphilitic infection visceral syphilis is of hereditary origin, then we shall be obliged to attribute nearly 50 per cent. of cases with visceral syphilis to hereditary infection. So far the majority of the patients have denied or really could not remember anything about their previous symptoms. This was observed also in our cases. Out of 36 female and 96 male patients, in whom syphilitic aortitis was found at the post-mortem made by Dr. E. Fraenkel, only one female patient gave a history of syphilitic infection by her husband four years previously. Out of the 96 male patients less than a half gave a history of syphilitic infection or treatment with mercury.

CONCLUSION.

So far I have not been able to find in the literature a single case of proved hereditary syphilitic aortitis in older children, and especially in adolescents and adults, though such cases may exist. Thus further researches about hereditary syphilitic aortitis are needed.

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SUPRARENAL SARCOMA OF THE ROBERT HUTCHISON TYPE.*

By F. PARKES WEBER, M.A., M.D., F.R.C.P.Lond.

THE patient, D. L. S—, aged 5 years, a cachectic and emaciated English girl, was admitted to hospital on March the 4th, 1920. The liver was enormously enlarged and the eyelids of both eyes were symmetrically swollen and ecchymotic, of a blackish blue or purple colour (see Fig. 1). The liver, of firm consistence, could be felt occupying most of the front of the abdomen; the right lobe extended down to the pelvis, and the left lobe nearly so; the surface of the organ was smooth and even; the gall-bladder could not be distinguished by palpation. The spleen was likewise not made out. There was slight ascites, enough to give a fluctuation-thrill. There was no enlargement of any superficial lymphatic glands. By Röntgen-ray examination of the thorax (Dr. James Metcalfe) some hilus lymph-glands were seen. By ophthalmoscopic examination (Dr. C. Markus) the optic discs were found to be pale and to have blurred edges, indicating a condition of post-neuritic atrophy of the optic nerves; there were no retinal hæmorrhages. The child was nearly blind with both eyes. The superficial veins over the front of the abdomen were much distended and the veins on the forehead were also abnormally noticeable. The whole face had a swollen, "puffy" appearance. There was moderate œdema of the lower part of the trunk and the lower extremities. There was no fever; the pulse was 104 to 140 per minute; respirations 28 to 36. Brachial systolic blood-pressure, 108 mm. Hg. The urine was of specific gravity 1027, acid, loaded with urates, free from sugar, and showing only a slight trace of albumin.

The *history* obtained was that the child had "influenza" in April, 1919, but that the present illness commenced at the beginning of November, 1919, with various pains. The belly had been enlarged for the last month, and the child had been nearly blind for the last five days. The ecchymotic swollen condition of the eyelids had been present during the last fortnight, but had for a time been previously observed, namely, for six weeks or so about the end of 1919. During the last week there had been occasional vomiting.

The father, aged 28 years, and the mother, aged 29 years, were both of them healthy-looking and intelligent, and in both of them the Wassermann reaction (March the 8th, 1920) was completely negative. The patient was their second child. The mother had had two other children (both living); no miscarriages.

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* A paper read at the Royal Society of Medicine, Section for the Study of Disease in Children, on April the 23rd, 1920.

By the advice of a doctor the patient had been given a teaspoonful of brandy four times daily, and this was continued from the beginning of November till the beginning of December, 1919. Since that time a teaspoonful of brandy had been administered occasionally (not often). This history made one at first think of the possibility of the child having alcoholic "hypertrophic" cirrhosis of the liver. If the brandy was of a bad quality, adulterated with methyl-alcohol, the optic nerve disease might also be accounted for. But it was ascertained that one of the finest obtainable

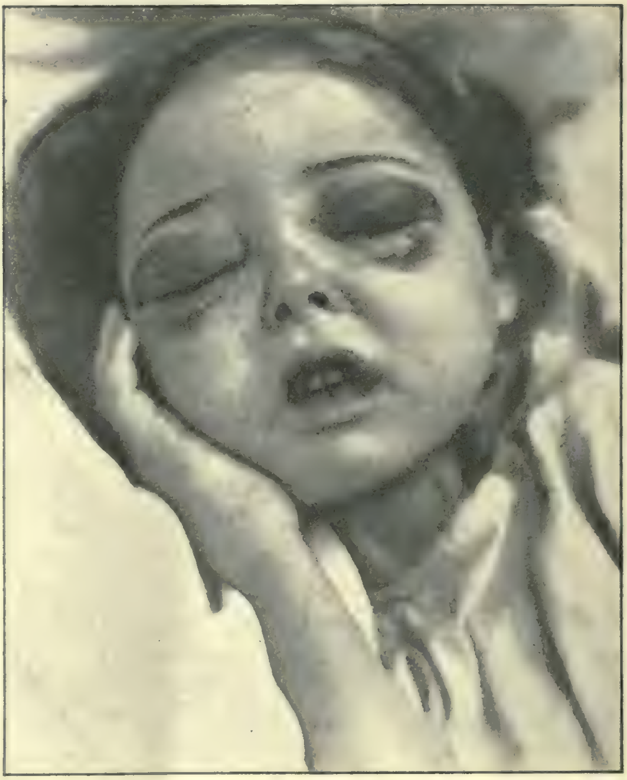

Fig. 1.—From a photograph (for which I am indebted to Dr. Fankhauser) taken on March the 14th, 1920, not long before the patient's death, showing the remarkable ecchymotic swelling of the eyelids.

qualities of cognac had been used. The whole illness could, therefore, scarcely be attributed to the brandy.

Chloroma or any form of leukæmia was negatived by examination of the patient's blood, which showed anæmia, but no great excess of white cells; nor was the differential count of white cells in favour of leukæmia. On March the 5th the red cells were counted as 1,700,000 and the white cells as 13,000 to the cubic millimetre of blood. On March the 12th the red cells numbered 1,130,000 and the white cells 14,600 per cubic millimetre of blood. The differential count of white cells (March the 7th), according to Mr. H. McLean, gave the following figures: Small lymphocytes, 24 per cent.; large lymphocytes, 4 per cent.; polymorphonuclear leucocytes, 72 per cent.; no eosinophils and no mast-cells were observed during the count of 300 white cells. The red cells varied in size and there was a little poikilocytosis and polychromasia, but nothing else abnormal was found by microscopical examination.

The existence of some kind of tumour at the back of the eyes seemed probable, to account for the blindness (post-neuritic optic nerve atrophy) and the ecchymotic swelling of the eyelids. The remarkable ecchymotic discoloration and swelling gradually increased in the hospital, and involved not only the eyelids but also some of the forehead and cheeks. The œdema of the lower extremities and trunk became more marked, and the hands likewise became œdematous before the child's death on March the 15th, 1920.

NECROPSY AND MICROSCOPICAL EXAMINATION.

In the abdomen a tumour, as large as a big orange, but of irregular shape, was found attached to the upper pole of the right kidney, which appeared very anæmic, but otherwise normal. The tumour was curiously lobulated, and in parts was very sanguineous. It showed actively growing nodules, excessively hæmorrhagic portions, and likewise necrotic areas, which last were brownish or nearly white. Microscopically the tumour had the appearance of a round-celled sarcoma. It doubtless originated in the medullary portion of the right suprarenal gland, and remains of suprarenal cortical tissue could be made out by microscopical examination in the layer of compressed capsule-like tissue enclosing the neoplasm.

The left suprarenal gland seemed normal. The left kidney was pale (like the right one), but otherwise normal (confirmed by microscopical examination).

The liver was very greatly and almost symmetrically enlarged, weighing 91 oz. It was of light brown colour on the surface. By cutting into it and by microscopical examination it was found to be infiltrated with pale, not sanguineous, new-growth; in some parts there was relatively less new-growth than in others. The tumour-cells resembled those of the right suprarenal tumour. They are shown in the accompanying figure (Fig. 2), separating the columns of liver-cells and apparently situated in the blood-capillaries. Mingled with them are lymphocytes.

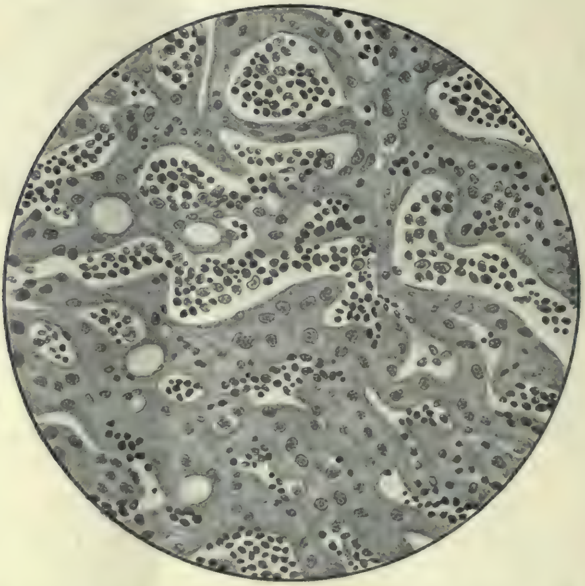

FIG. 2.—Microscopic drawing (magnification 320) from a section of the liver to show the diffuse sarcomatous infiltration of the liver. The tumour-cells distend the blood-capillaries between the columns of hepatic glandular cells, and mingled with them are lymphocytes.

The spleen (weight, 2½ oz.), pancreas, heart and right lung showed nothing special, but old pleuritic adhesion was observed about the left lung. There was no fluid effusion in any of the serous cavities at the post-mortem examination. The ovaries (of the size of olives) were both enlarged with very sanguineous new-growth, similar to the right suprarenal tumour (confirmed by microscopical examination of one ovary).

There were abdominal lymphatic glands similarly infiltrated with new-growth, but some caseous lymphatic glands at the roots of the lungs and in the mediastinum (one of them was examined microscopically) were doubtless tuberculous.

The orbits and skull were more or less symmetrically involved by metastatic, very sanguineous areas of new-growth, the cells of which resembled those of the suprarenal tumour. In the cranial cavity the growths were flat and diffuse and were situated between the dura mater and the inner table of the skull. Osteophytic spicules projected from the inner table into these metastatic deposits. The brain itself seemed normal. The ecchymotic swelling of the eyelids, which constituted such a notable clinical feature of the case, was doubtless due to blood-extravasation connected with the diffuse tumour-infiltration of the periosteum of the orbits, etc. The optic neuritis and blindness may have been partly due to actual compression of the optic nerves at their passage through the optic foramina. The structure of the tumour in the right suprarenal mass, the abdominal lymphatic glands, the ovaries, the dura mater and cranial bones was obviously all of the same kind. The diffuse growth in the liver, as I have already stated, differed somewhat from the growths elsewhere, but only inasmuch as it contained relatively little blood.

I have to thank Prof. S. G. Shattock for his kind help in the examination of the pathological specimens from the case, and for superintending the drawing from a microscopical section of the liver (Fig. 2).

REMARKS.

The case is evidently one of primary malignant disease of the medullary portion of the suprarenal gland in a child, with secondary, multiple, diffuse, more or less symmetrical metastases in the cranium —of the type of which Robert Hutchison, in 1907, collected ten examples, six of which were as yet at that time unpublished. In 1908 W. Tileston and S. B. Wolbach reported a fresh example of adrenal sarcoma in a child of the Robert Hutchison type. For certain reasons (though, I think, wrongly) they rejected one of Hutchison's ten cases (that of Ogden and Mathews in 1906), but they added four further cases which they had discovered in their search through the literature. Thus they brought the total number of known cases up to fourteen, including the one described by themselves. They said that the tumour-cells resembled the undifferentiated cells of the bone-marrow, the so-called pre-myelocytes or myeloblasts.

I see no reason for refusing to call the tumours in these cases sarcomata, though apparently R. S. Frew (1911) would call them carcinomata. Bulloch and Sequeira (1905) concluded that cases of primary "blastomata" of the suprarenal glands not associated with precocity in sexual development were usually lympho-sarcomata. That is perhaps practically equivalent to saying that the tumour-cells resembled the undifferentiated cells of the bone-marrow. But I do not think it advisable to call the growths lympho-sarcomata.

Clinically, owing to the involvement of the orbital region of the skull and the presence in some cases of decided exophthalmos, the children may at first sight be regarded as suffering from chloroma or some form of acute or subacute leukæmia, but this error could be avoided in the majority of cases, as it was in the present case, by a careful examination of the blood. Nevertheless, even at the post-mortem examination in the present case, the spicules of bone projecting from the inner table of the cranium into the deposits of new growth on the dura mater somewhat resembled a condition met with in chloroma—a condition which constituted a striking feature of Firth and Ledingham's case of "atypical chloroma," described about ten years ago. Moreover, microscopic examination of some portions of the liver in the present case might at first sight be supposed to show diffuse leukæmic infiltration of the organ.

Scurvy, with hæmorrhage in the orbits or eyelids, could not even be suggested as a possible explanation of the clinical manifestations in the child under consideration, though in some cases of infantile scurvy proptosis (especially of the left eye), due to orbital hæmorrhage, has been observed.

A remarkable feature of the present case was the enormous nearly uniform enlargement of the whole liver, which during life not only completely masked and concealed the presence of the suprarenal tumour, but also, when considered in association with the history of the medicinal use of brandy, gave rise at one time to the suspicion of alcoholic hypertrophic hepatic cirrhosis. It was suggested that the child's blindness might be due to the brandy having been adulterated with methyl-alcohol. But this suggestion, as I have already stated, was found to be wrong, when the remainder of the brandy which had been used was produced by the parents.

The excessive involvement of the liver in the present instance makes one think also of the cases, recorded by W. Pepper (1901), of sarcoma involving the liver and suprarenal gland in newborn children, but his cases were congenital and come under a separate category.

Perhaps the two most valuable diagnostic signs during life in the Hutchison group of cases are (when present), first, the dark ecchymotic swelling of the eyelids on one or (more usually) both sides, with or without actual exophthalmos, and, secondly, the optic neuritis or post-neuritic atrophy. In the absence of both these clinical signs one ought to hesitate in regard to the diagnosis. These signs were both absent in the boy, aged 2½ years, shown by E. Cautley on June the 20th, 1919, and the case turned out to be one of sarcoma not involving either of the suprarenal glands.

Addendum.

After reading a paper by Douglas Symmers ("Recurrent Neuroblastoma," 'Journ. Amer. Med. Assoc.,' 1913, lx, pp. 337–340), kindly sent me by Sir H. D. Rolleston, I have come to the conclusion that my case, like other cases of the Hutchison type, is really a malignant hypernephroma of the suprarenal medulla, not of sarcomatous, but of neuroblastomatous nature. The tumour-cells have very little cytoplasm, but richly chromatic (mostly rather large) nuclei. In some parts there are "tangled masses of fibrils," with a suggestion of "rosette-formation" of the cells. In my case the Hutchison distribution of metastases (in the cranium) was combined with excessive diffuse infiltration of the liver (as in the Pepper cases). Prof. Shattock had also drawn my attention to the "neuro-cytoma-like" appearance of the tumour-cells, but by a mistake I had not seen his note.

F. P. W.

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STIGMATA OF PREDISPOSITION TO BONE AND JOINT TUBERCLE.

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(*Continued from p.* 70.)

II.—COMPARISON OF SUBJECTS OF BONE AND JOINT TUBERCLE WITH NORMALS.

In the last number endeavour was made to pick out from the literature definite tangible personal stigmata which it was possible to regard as predispositional; and of those obtained, perhaps the most definite again are three in number, to wit red hair, ichthyosis and nasal abnormality. Mainly these three will be dealt with now. And first a word or two as to the

Clinical Material.

The study material comes from more than one source, as is advisable in order to get as fair a sample as possible of the disease under notice. First there are children—mainly, but not solely, under twelve years old—examined during a stay at the Treloar Hospital at Alton, Hants, and on several visits to the King Edward VII Hospital for surgical tuberculosis near Sheffield. I have to express cordial thanks to Sir Henry Gauvain, M.D., and to Dr. Lee Pattisson, of these institutions, for facilities extended to me. Then there are 73 patients of all ages, being those notified during the last six years in the district round Barnsley. Since in the great majority of instances tuberculosis attacks osseous and articular structures in childhood, the above constitutes a representative study material of this form of the disease. Not every patient has been examined for all three stigmata —occasionally a child would be too restive for nasal examination, and so on—but still an adequate number in respect of each particular. The control of normals has been got from school-children in South Yorkshire districts, relatives of the patients being of course excluded.

In the case of the first point of inquiry, that of the comparative incidence of

Red Hair,

the gross result comes out as follows:

Patients with tuberculous bone or joint—25 with red or reddish hair out of a total of 353 examined (7 per cent.).

Normal controls—21 with red or reddish hair out of a total of 610 examined (3·4 per cent.).

Thus in bone and joint tubercle red hair would seem to be a trifle more than twice as frequently met with as in the non-tuberculous. However, this gross result may overstate the truth a little. There is the possibly disturbing influence of minor ethnological differences to be considered. The Alton cases included some from Wales, a country whose inhabitants, according to Beddoe(1), the home anthropological authority who has especially worked at pigmentation, have red hair more commonly than usual. At Alton there were 23 Welsh patients, of whom 2 were red-haired—a percentage of 8·6, the percentage in the whole hospital being 7·3. Still, if we leave these 23 cases out of count, obviously the percentage found in the whole material is lowered only to 6·9. Minor ethnological differences might be expected, indeed, to be outweighed by pathological ones. An exact comparison in the ethnological regard is furnished by the cases from Yorkshire, since all of them, tuberculous and healthy alike, lived in the southern part of one division of this county.

In 95 with bone or joint tubercle there were 6 with red hair (6·3 per cent.).

In 610 normals there were 21 with red hair (3·4 per cent.).

The numbers of the tuberculous are small here, however, so that we shall probably be within the truth if we conclude that *in bone and joint tubercle red and reddish hair is nearly twice as frequent as in the ordinary population.*

Respecting sex-incidence there is nothing to note; red hair affected the sexes exactly equally in the normals, almost so in the tuberculous.

As to the situation of the tuberculous lesion, perhaps in the red-haired the spine was rarely attacked. Hardly more of them than of the others had multiple lesions of tubercle.

Regarding *freckling,* which was present in every case of red hair save one, usually with marked intensity, two comparisons were made. The first took place in the beginning of September, when the normal school-children had just come back from a month's holiday at the hottest time of the year, and therefore could be compared with the tuberculous children, so many of whom had undergone heliotherapy. No significant difference between the two classes was found. The second trial was made at the beginning of February, when summer freckling had had time to fade and when no sunlight of any strength occurred (the tuberculous patients examined had undergone no artificial heliotherapy either). It resulted as follows :

FRECKLING.

	Ordinary.	Heavy.
Tuberculous	65 per cent.	5 per cent.
Control	57 „	3 „

Probably then a tendency to permanent freckling is a little commoner in bone and joint tubercle than is normal.

In pathological respects skin, hair and teeth are often connected. Cornet quotes figures showing that women suffer from dental caries more than men do, and supposes some relation with women's thinner skin, which he makes a factor in their greater liability to surgical tubercle. Accordingly it seemed of interest to inquire as to the teeth of red-haired children as compared with others. Mr. Bowler, L.D.S., dental surgeon to the West Riding Education Committee, and Nurse Sievwright have kindly furnished me with particulars concerning 371 red-haired children and 297 others drawn from the same schools. The percentages come out as follows, those referring to the red-haired children being in heavy type:

	Boys.		Girls.	
Sound teeth	**15**	15	**16**	19
Decayed temporary teeth	**57**	58	**60**	50
Decayed permanent teeth	**26**	25	**23**	29

As regards dental caries, then, there is no significant difference between the red-haired children and the others.

Lastly, it is well worth noting that red pigmentation is a primitive trait. In primeval man "the hair is long and straight, the colour probably bright chestnut red and the skin copper colour . . . the foreheads recede, the large bushy red eyebrows meet over the nose" (Worthington Smith in 'Man the Primeval Savage,' cited by Hutchinson, 'Prehistoric Man and Beast,' London, 1896, pp. 35, 36). The red hair of the Welsh aforementioned may be an instance in point, they being more of an ancient, unmixed stock than the English. As for lower animals, Lubbock ('Origin of Civilisation,' 4th ed., London, 1882, p. 515) says the original of the domestic fowl was of a reddish colour, and quotes Darwin's finding atavism in crossing a white and a black breed, when red feathers appeared in the offspring. One recalls, too, that the most primitive breed of English pig, the Tamworth, which shows "unimproved" characters, long legs and snout, prolificacy, large consumption of food and poor fattening capacity, is also of red colour.

ICHTHYOSIS.

Ichthyosis occurred in our material thus:

In 71 Barnsley cases (40 male, 31 female), 1 ichthyotic (female).

In 258 Alton cases (144 male, 114 female), 3 ichthyotic (2 male, 1 female).

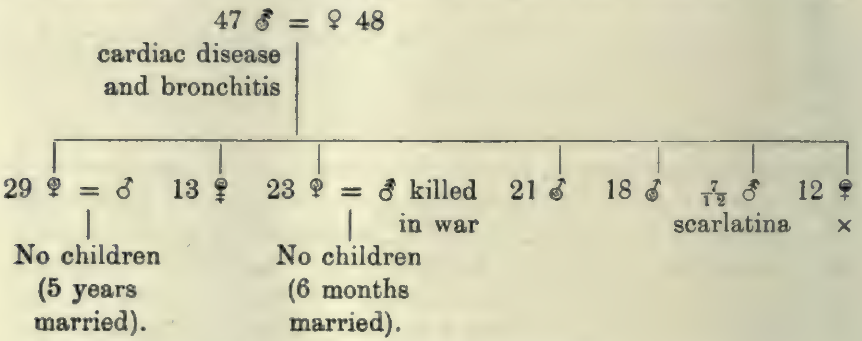
In 92 Sheffield cases (60 male, 32 female), 3 ichthyotic (2 male, 1 female).

In 421 total cases (244 male, 177 female), 7 ichthyotic (4 male, 3 female).

On the total, then (and in both males and females), the percentage of ichthyosis was 1·6. This compares very closely with the 1·4 per cent. found by Rivers (*loc. cit.*) in consumptives. The difference, if any, might be expected to be in favour of surgical tuberculosis, because in this form the age of attack is lower, and ichthyosis tends to ameliorate with time, so that a slight childish xerodermia might be no longer apparent in a consumptive, say, of thirty years old. The even sex-incidence is known to occur in ichthyosis. However, there are two diagnostic fallacies to be borne in mind in connection with its occurrence in bone and joint tubercle. The first is the desquamation which often follows heliotherapy; the second the general dryness of integuments seen in children not in good health. But skin roughness arising in either of these ways shows little of that predilection for extensor surfaces which is so elementary a characteristic of ichthyosis and xerodermia, while the presence of other well-known features of this affection is shown in the seven appended case-histories.

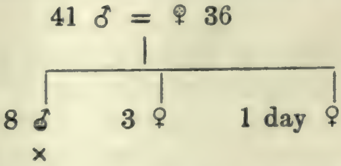
Barnsley case.—A. B—, school-girl, aged 12 years. Tuberculous periostitis of tibia and dactylitis of left hand for eleven weeks past; later pyogenic scrofulosis developed. She had ichthyosis of the knees, shins and upper arms, which, according to her mother, had existed from early childhood. All her brothers and sisters (ichthyosis is known as the most hereditary of skin diseases) had rough skin too, except an infant which died at seven months old of scarlatina. The mother reported that as young infants none of them showed rough skin (of course a familiar history in ichthyosis). Besides this child, the mother was the only one in the family with normal skin, for the father, who died at forty-seven of cardiac disease and chronic bronchitis (ichthyotics are known to be liable to cardiac affection), had ichthyosis so severely that his bed, and sometimes the bedroom floor, would be white with desquamated skin-flakes. Obviously this family history can be conveyed more briefly in pedigree form, employing the usual symbols (♂, ♀) for male and female respectively, leaving the circle clear for normals, filling it in for tubercle (♂, ♀), filling it with dots for ichthyotics (♂, ♀), and half-and-half (♂, ♀), for tuberculous ichthyotics. Dead subjects are shown thus (♂, ♀).

In this notation the above girl's family is thus recorded :



The cross below a subject denotes the patient.

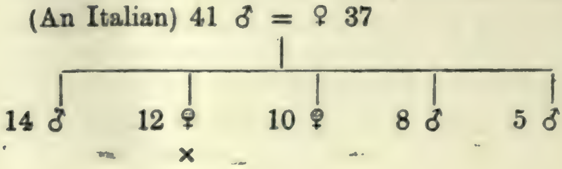
Alton cases.—S. K—, London school-boy, aged 8 years. Lumbo-sacral caries of some duration, phthisis, lardaceous disease. Ichthyosis affecting most of trunk and limbs, and dating from an early age.



The mother's condition was peculiar : the face alone was rough and she had no eyelashes. She stated that these had never grown, and that a sister of hers (married, with three normal children) had just the same facial peculiarity.

V. J—, school-boy, aged 5 years. Tubercle of left hip. A dark, pretty, curly-haired child with skin rough all over body, limbs and face. The parents lived a great way off, and were not seen. It was stated, however, that the father had rough skin.

M. S—, London school-girl, aged 12 years. Tubercle of right hip. Ichthyosis mainly of limbs (see photograph) dating from an early age.



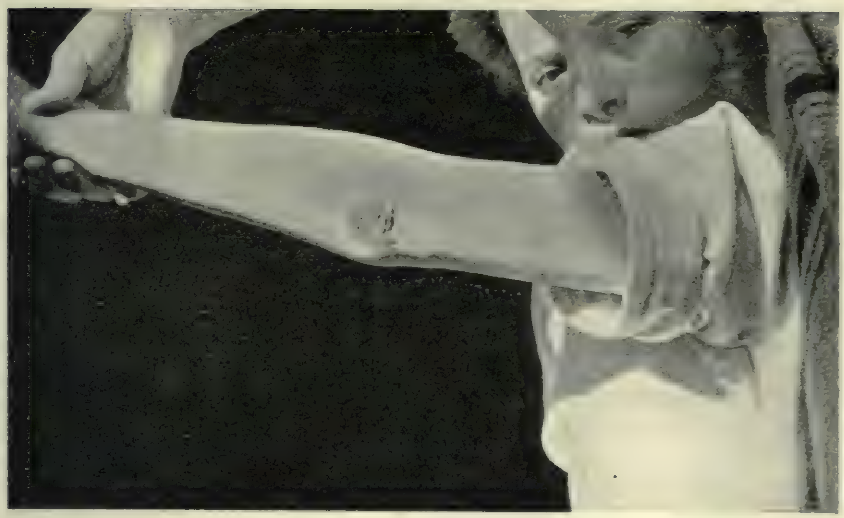


FIG. 1.

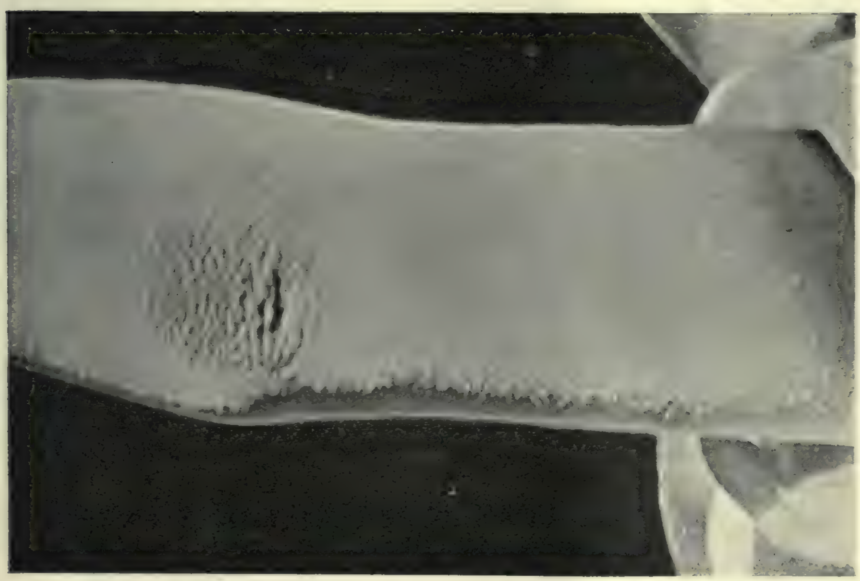
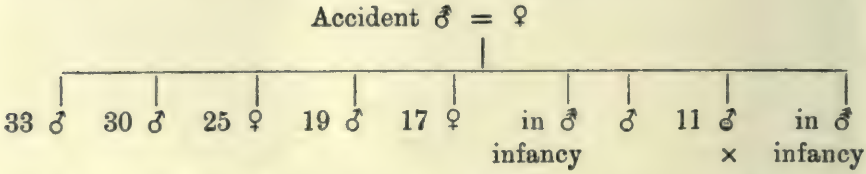


FIG. 2.

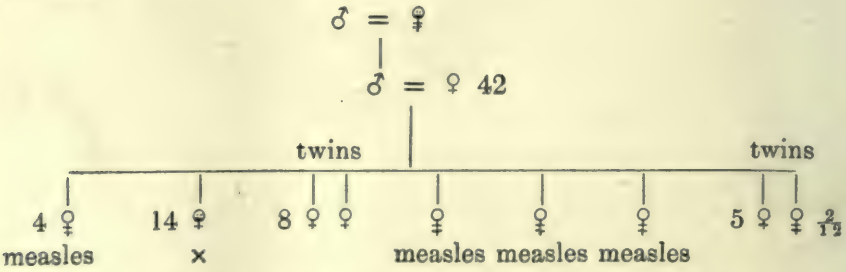
Ichthyosis of arms in a girl, aged 12 years, with hip disease. (Note fine roughness on upper arm and forearm, with exaggerated cornification of skin over point of elbow.)

The mother volunteered that she had a sister who has a child, an apparently healthy girl, aged 6 years, with "fish-scale skin," the only other offspring being a baby which died three hours after birth. This pedigree of M. S— shows sex-limitation of the ichthyosis in the family—a phenomenon known to occur in a certain proportion of ichthyotic families.*

Sheffield cases.—T. B—, Sheffield school-boy, aged 11 years. Tubercle of left hip. Slight ichthyosis, mainly on limbs.



A. N—, Sheffield school-girl, aged 14 years. Tubercle of left hip and left knee. Ichthyosis on face and shins. The mother thought the child had the skin rough only since her leg got bad. However, the history of rough skin in a grandparent is significant, as also probably the double twinning in this family with the (rather often associated) excess of female births: in families where twinning is frequent (says A. Mitchell in 'Medical Times and Gazette,' 1862, ii, p. 512) bodily deformities likewise occur with frequency. Simpson ('Obstetric Works,' vol. ii, p. 349) also maintains the relation of malformation to twinning. Many cases of malformations in twins are cited by Féré ('Famille névropathique,' 2nd ed., Paris, 1898, p. 175).



W. F—, Sheffield school-boy, aged 6 years. Caries of upper dorsal spine. Ichthyosis of face and legs. The teachers reported of this boy that he was very forward at his lessons, being able to do sums that most children of his age could not. The mother was free from ichthyosis, and said there was no rough skin or tuberculosis in the family (he was an only child).

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* As in eight out of forty-five ichthyotic pedigrees collected by Stainer ('Oxford Dissertation,' H. Frowde, 1910), and now quoted in text-books.

Amongst these seven ichthyotics, the proportion of multiple lesions —four, or more than half—is certainly rather high; however, the numbers are too small to afford a reliable indication.

We have said, in connection with red hair, that this stigma cannot possibly be tuberculo-toxic in origin. It might conceivably be urged that in the ichthyotic cases, although mostly there was a clear history of the skin affection preceding the visceral one, yet all the same the ichthyosis was an expression of latent tuberculosis; Tommassolli (*loc. cit.*) thought ichthyosis might be the sign of some undefined chronic auto-intoxication. This could be urged, but evidence in support of the hypothesis does not seem to exist. Although several skin diseases have been rightly re-classed with the tuberculides, no one has ever advanced any claims of ichthyosis to rank among their number; and its histo-pathology has been very thoroughly studied too. But there is much evidence against such a view, partly noticed in Chapter I. In a Barnsley ichthyotic patient with surgical tubercle, not included in the above series because met with before systematic recording of bone and joint cases had been begun, the question as to diagnosis of the joint affection was raised by a surgeon. Accordingly a test injection of tuberculin was given, and fortunately there resulted a focal reaction. The joint became red, painful and swollen, showing that the enlarged knee was tuberculous. But no sign of reaction occurred at any place on the patient's ichthyotic skin. Rivers (*loc. cit.*) had similar experience with ichthyotic consumptives and concluded that the tuberculosis was no cause of the ichthyosis. The *à priori* case, as put in the last chapter and in the present one, is rather strong for the likelihood of the skin affection predisposing to the visceral one. It is just this *à priori* case, arising partly from the peculiar morbid associations, and degenerative, atavistic* character of ichthyosis, that the practising specialist clinician is apt to miss sight of. Lastly, to make ichthyosis into a tuberculide involves regarding all ichthyotics as tuberculous subjects, which is rather absurd. Ichthyosis first appears, as is well known, at a time of life comparatively free from latent tubercle.

The control of normals consisted as before of South Yorkshire school-children from whom relatives of the patients had been excluded. This point would be important to anyone who, not knowing the tuberculous population of a neighbourhood, desired to repeat there this particular inspection of school-children. For it would probably be found that the ichthyotics who are discovered have consumptive or surgically tuberculous relatives (and also relatives with cardiac disease) noticeably frequently. Tuberculous patients who, being treated at home by their family doctor, had not got on to the tuberculosis dispensary books, have been discovered in this way.

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* See, for instance, the atavistic theories of origin of ichthyosis due chiefly to Bowen, 'Journal of Cutaneous and Genito-urinary Diseases,' New York, 1895, xiii, p. 485. Also to Renshaw, 'A New Theory of Ichthyosis,' Manchester, 1914.

In 324 subjects (123 boys, 201 girls) ichthyosis was seen twice, both times in the latter sex; the percentage was thus 0·6, which contrasts with the 1·6 per cent. found in the tuberculous: 1·6, by the way, is exactly the percentage also of all forms of non-infectious skin disease amongst school-children of the West Riding of Yorkshire*; ichthyosis alone must therefore be greatly less common. We may safely conclude that *it is at least twice as frequent in bone and joint tubercle as in non-tuberculous children.*

(*To be continued.*)

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, April the 23rd, 1920.

The President, Mr. J. P. Lockhart-Mummery, *in the Chair.*

Three Cases of Renal Dwarfism Associated with Curious Bony Changes.—Dr. D. H. Paterson.—Case 1 was that of a boy, aged 11 years, who was admitted to hospital in January, 1917, for deformity of the legs and arms and inability to walk because of knock-knee. The condition had been present for four years. He was healthy at birth and breast-fed for nine months, but afterwards kept on fluid food longer than usual since he disliked solids. He had always been fond of fruit, and had been a great drinker of water. The father and mother and the four other children of the family were all healthy and showed no bony deformities, nor was there any family history of kidney disease. Until the age of six he had been quite well, but then had an illness which started acutely, and was accompanied by feverishness and vomiting. After this he did not seem so well, and at the age of seven it was noticed that his legs were bent, and he became progressively more knock-kneed. He was treated for rickets by splints, but at seven and a-half years old was admitted to the local hospital, where it was found that he had kidney disease. The bones of his legs were broken and reset, and from that time he had not been able to walk. When admitted to the Hospital for Sick Children, Great Ormond Street, he was found to be a very small, pale child, and very thin. The legs were markedly deformed, with bowing outward and forward of the femora and tibiæ; there was also marked muscular wasting. An operation of double osteotomy of the femora was done, and was followed by uræmia, which proved fatal. The urine, examined after operation, contained albumin and casts. X-ray examination showed bony deformities. Post mortem the kidneys were extremely small and showed some cystic and fibrotic changes. The only other organ which was found abnormal was the heart, which was dilated.

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* 'Seventh Annual Report of School Medical Officer,' Wakefield, 1915, p. 50.

Case 2 was that of a boy, aged 1 year and 9 months, admitted to hospital in September, 1919, with deformity of the ankles and wrists, which had been present for ten months. There was no other case of deformity in the family. The boy had been breast-fed until eleven months old, and had never been able to take any solid food. When a year old he was fat and could stand, but was small. He seemed to lose power in his legs, and later it was noticed that his arms gave way also, and he had no strength in them. They afterwards became permanently flexed. After an illness in March, 1919, associated with constipation and vomiting, he steadily lost weight. When admitted he was seen to be a very much under-developed and under-nourished child, and weighed 10 lb. 8 oz. He seemed to be bright and intelligent, but did not speak. The thorax was long and narrow in shape, and there were parietal and frontal bossing and open anterior fontanelle, beaded ribs and Harrison's sulcus. The liver and spleen were both enlarged. The back was straight, but the limbs were extremely deformed; the femora were bowed and the patellæ rotated outwards; the tibiæ were very bowed, and the radii and ulnæ showed a like deformity. The hands were held in accoucheur position, but there was no suspicion of tetany. Respiratory, circulatory and nervous systems were normal. Ten days after admission the child's diet was increased to solid food, including minced meat and potato. He then developed uræmic convulsions and died. Post mortem the left kidney was found to be extremely small and appeared to be cirrhotic. The right was slightly larger, but was also abnormal, its condition suggesting old inflammation and its capsule stripping with difficulty. Both suprarenals were enlarged. The bones showed changes typical of rickets at the epiphyses. Microscopically the sections of the kidney showed a condition of fibrosis to a marked degree, the kidney substance being replaced entirely in some areas by fibrous tissue. The arteries were greatly thickened and many of the glomeruli were obliterated. In some places the tubules showed enlargement as though in an early stage of cyst-formation. The kidneys weighed about a drachm each.

Case 3 was that of a girl, aged 7½ years, admitted for the contracted legs and bent wrists which had been present since birth. There was no family history of a similar condition. She was a premature child, born at the seventh month of intra-uterine life, and had been breast-fed for six weeks, after which time she was given cow's milk and seemed to thrive quite well. She had never walked. At three years a tenotomy had been done, as her feet were drawn up. On admission she was found to be 34 in. in length. Her head was square and bossed. The shoulders were sloping and rounded, and the clavicles curved antero-posteriorly. There was possibly an old fracture of the right clavicle. Flexion, extension and abduction of the shoulder-joint were all limited. The humeri were very thin. The radius and ulna on each side showed great enlargement and deformity at the lower ends, giving the impression of old fractures which had united in bad positions. The thorax was long and narrow and pigeon-chested, and the ribs were beaded. The liver reached to two fingers' breadths below the costal margin; the spleen was just palpable. The legs would not fully extend at the hips, and there was considerable genu valgum with rotation of the patellæ outward, the knees not being able to be fully extended. The tibiæ were small and sabre-shaped, and the lower ends of the tibiæ and fibulæ were much enlarged. Dorsiflexion of the feet beyond a right angle was impossible. The back was straight. The urine contained a trace of albumin but no casts. Mentally the child was very backward and seldom spoke. The phenol-sulphophthalein test indicated a great retardation in the secretion of the kidney. The Wassermann reaction was negative. An attempt was made to correct her bony deformities, but the left leg was refractured while being manipulated. Two days before her death she developed fine tremors of her hands, and a large amount of albumin was present in the urine. The urea was 0·3 per cent., and the nitrogen excreted as ammonia was to that excreted as urea as 1 to 10. Creatinin equalled 8 mgrm. in 10 c.c. of urine. The child became comatose and died, passing no urine during the last twelve hours of her life. The cerebro-spinal fluid was normal but for a greatly increased amount of urea. The kidneys, post mortem, weighed 12 drm. each and the suprarenals 2 drm. each. The kidneys were cirrhotic, their capsules stripping with great difficulty, and on section several small cystic spaces could be seen. Microscopically there was marked increase of fibrous tissue throughout the kidneys and a tendency to cyst-formation, the tubules being greatly enlarged and filled with colloidal material. The glomeruli were fibrosed in places. Attention was particularly drawn to the bony deformities. These, he considered, were quite unlike those of rickets; the epiphysial lines were straight and the radiographs distinct from those of rickets. Below the epiphysial lines there was a stippled appearance, which the microscope showed to be due to cartilaginous callus with partly formed bone present in the islets. The same appearance might be seen in rabbits at the site of a fracture. One explanation of the picture might be that it indicated the repair of multiple fractures by the bone throwing out cartilaginous callus at their sites. Certainly the radiograms seemed to show that there had been multiple fractures on the diaphysial side of the epiphysial line.

Case of Renal Infantilism.—Dr. H. MORLEY FLETCHER showed a girl, aged 14 years, who had been backward in physical development since infancy and had suffered from polyuria. She was small, weighing only 35½ lb., with a pallid face and poor nutrition. Her intelligence was good. There were no signs of puberty, and her appearance was that of a girl aged five or six. The systolic blood-pressure equalled 240 mm. Hg. The left ventricle was hypertrophied, and the aortic sound (second) accentuated. The radial pulse was thin and wiry. The only bony deformity was a slight genu valgum. The urine was acid, its specific gravity 1010, and it contained 0·3 per cent. of albumin and a few granular casts. The *Streptococcus fæcalis* had been grown from it. Albuminuric changes were present in the optic disc and were of some standing. Speaking of these cases generally, he said that the degree of infantilism was perhaps more marked than in any other form of that condition, but the order of intelligence was rather high. A question of interest was the significance of globulin in the urine. It had been noted in two cases. The relationship between the renal infantilism and the bony deformity was obscure. It was clear that the renal changes began either in intra-uterine life or in early infancy. Syphilis could be excluded as the cause. A possible explanation might be infection of the urinary tract.

In the subsequent discussion Dr. H. C. CAMERON referred to a very early case, described by Davies Colley in about 1880, under the title, "Dwarfism and Extreme Deformity." He had himself shown a case where the fibrosis was combined with a horse-shoe kidney, and suggested that the two might be ætiologically associated. He had under his care at present a case which was very characteristic in appearance and with similar bony changes, but without albuminuria. A practical point had been emphasised by Barber, namely, the danger of operative interference, for uræmia was likely to follow.

Dr. F. PARKES WEBER drew attention to a group of cases included under the term "diabetes insipidus" in which some infantilism is present (*vide* THE BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 211). The differences were that in this group the degree of infantilism was not very great, there was an absence of organic disease of the kidneys, the faulty organ was probably the posterior lobe of the pituitary gland, and the Wassermann reaction was often positive, congenital syphilis probably playing a part.

Suprarenal Sarcoma of the Robert Hutchison Type.—Dr. F. PARKES WEBER (*vide* p. 133).

Friday, May the 28th, 1920.

The President, Mr. J. P. LOCKHART-MUMMERY, *in the Chair.*

Dislocation of the Thumb.—Mr. B. WHITCHURCH HOWELL showed a case of this condition in an infant. The acute flexion of the terminal phalanx caused it to resemble congenital contraction—a condition with which it might easily have been confused had no history of the accident been available.

Case of Oxycephaly.—Dr. THEODORE THOMPSON showed a case in a child, aged 1 year. The child showed an extreme degree of this deformity, the eyes being very protuberant and the vertex of the skull very high. The occiput was but little developed. An especially interesting feature was that the early age of the infant permitted an increased intracranial pressure to be recognised readily. The anterior fontanelle was widely open and bulging, and the posterior fontanelle was also open. The frontal bones were separate. No other deformity was present and the intelligence was good.

Congenital Heart Disease.—Dr. D. H. PATERSON showed two specimens of this condition. Case 1 was that of a male baby, aged 10 months, who had been admitted to hospital acutely ill with general pulmonary catarrh, accompanied by high remittent fever. Contrary to the rule, his dyspnœa had been less in the completely supine position than when he was propped up. The pulse was over 160 and often uncountable. There was no definite bruit. Death occurred after three days. Before admission to hospital he had been feverish for a day or two. Blueness had never been noticed, but there had been previous attacks of breathlessness. Post mortem the lungs were congested, but there was no evidence of pneumonia. The heart weighed 2 oz. 14 drm. Immediately below the aortic cusps there was a hole in the interventricular septum. The aortic, pulmonary and mitral valves were all large, distorted and fleshy, but the endothelium was glistening and showed no evidence of inflammation—an observation which was corroborated by microscopical examination. Both the right and left ventricles were hypertrophied, the left more than the right. The ductus arteriosus was closed.

Case 2 was that of a male infant, aged 8 weeks, admitted to hospital for cough and dyspnœa of one day's duration, accompanied by moist sounds in the lungs. The dyspnœa was urgent, and it was found necessary to support the chest and let the head fall well back to enable the child to breathe. The respirations were sometimes rhythmical. The child was extremely pale. No cardiac murmur was heard. Death occurred next day. Post mortem the lungs were merely congested. The heart was transversely placed within the thorax and weighed 2 oz. 6 drm. The right auricle was distended and thin-walled, and the left auricle small and rudimentary. Communicating between the two was a patent foramen ovale admitting the tip of the little finger. In the floor of the left auricle lay a completely stenosed mitral orifice. The right auriculo-ventricular valve consisted of two cusps, and the corresponding orifice led into a large, thick-walled chamber, from which both the aorta and the pulmonary artery proceeded. The valves of these vessels were well formed. Below the origin of the pulmonary artery was a dilated space, the bulbus cordis, which, according to Prof. Keith, corresponded developmentally to the third ventricle of the fish. The ductus arteriosus was not patent.

Case for Diagnosis.—Dr. E. A. Cockayne showed a case for diagnosis, probably one of congenital syphilis. The boy, aged 9½ years, was undersized and mentally backward. His arms and legs were very long in proportion to his trunk, the distance from the symphysis pubis to the ground being only 1½ in. less than from the symphysis pubis to the vertex. The limbs were very slender and the feet and hands very narrow, but not longer than normal. Skiagrams showed marked osteitis of the whole of both femora and very slight osteitis of the tibiæ and fibulæ. Both humeri were thickened and probably the seat of osteitis. There were general muscular weakness, lordosis and flat feet. The testicles were very small. There were no other stigmata of congenital syphilis, the Wassermann reaction was negative, and the family history was good.

SECTION OF SURGERY: SUB-SECTION OF ORTHOPÆDICS.

November the 4th, 1919.

Birth Palsy in a Boy.—Mr. R. C. Elmslie showed a boy, aged 11 years, the eldest of three children. Delivery was instrumental, and three days after birth it was noticed that the arm hung at the side, and was never used. No treatment by splinting had ever been carried out, and no treatment had been given at all for several years past. At the present time all the muscles of the upper limb appeared to act except the external rotators of the shoulder. The arm was held in a fixed position of abduction, forward flexion and internal rotation at the shoulder-joint, only a small range of movement being possible. The elbow was flexed, complete extension being impossible. There was a subluxation of the humerus backwards, so that it formed a prominence below the spine of the scapula. X rays showed that the head of the humerus was flattened and deformed. The case was of interest because of the marked forward flexion and abduction of the shoulder. The line of treatment proposed was first massage and mobilisation of the elbow-joint, with faradic treatment of all the muscles of the limb and active use of the hand, and later the performance of Fairbank's operation for dividing the anterior part of the capsule of the shoulder-joint and the tendon of the subscapularis, with after-fixation of the arm with the shoulder abducted to a right angle and fully externally rotated for a period of three months, and then active physical treatment.

Case of Os Tibiale Sesamoideum.—Mr. R. C. Elmslie.—The patient was a girl, aged 11 years, who three weeks before coming to hospital fell down some steps and doubled her left foot under her. From that time the inner side of the instep had been painful. Palpation showed that the tender spot was over the tubercle of the scaphoid. On X-ray examination separate ossification for the tubercle of the scaphoid on either side was found. On the left side the separate piece of bone appeared to be a little rough on its deep surface. The case appeared to be one of os tibiale sesamoideum, in which an injury had loosened the separate piece of bone upon the left side and rendered it temporarily painful. Mr. Elmslie proposed to fit an outside iron so as to throw the weight on to the outer side of the foot and so rest the scaphoid.

Injury to the Neck of the Femur Produced in Straightening a Flexed Hip in Infantile Paralysis.—Mr. E. Laming Evans showed skiagrams from a girl, aged 5 years, suffering from infantile paralysis of the lower limbs, in whom, while a flexed hip was being manipulated under an anæsthetic after subcutaneous division of the tensor fasciæ femoris, something seemed to give way in the joint. Only very slight force was used at the time. Skiagrams showed a fracture of the neck of the femur and separation of the epiphysis of the hip. It was possible, however, that the latter condition was apparent only, and that the real lesion was a simple fracture.

December the 2nd, 1919.

Two Cases of Multiple Congenital Deformities.—Mr. H. A. T. Fairbank.—Case 1: The boy was aged 11 years. He had bilateral talipes equinovarus and dislocation of both hip-joints. In the upper limbs there was a posterior subluxation of the left shoulder-joint, which was not reducible. The condition of this joint was very similar to that seen in the late stage of a birth palsy. The right elbow-joint had across the flexor aspect a bridge of skin stretching between the arm and forearm. Extension of this joint was limited. Both wrists were flexed and the fingers clawed, the metacarpo-phalangeal joint being extended and the interphalangeal joints flexed. Sensation was normal throughout. The limbs were very thin and the musculature feeble, but all the muscles reacted to a faradic current except the extensors of the wrist. Although the condition of the left shoulder resembled that seen in birth palsy, it must be probably regarded as developmental because of its association with so many true congenital deformities.

Case 2: The boy was aged 4 months. In the upper limbs the extension of the left elbow was limited; the left hand was originally in the position of dorsiflexion with ulnar deviation. These deformities had been to some extent corrected by treatment with splints. The left hip was dislocated, the left knee rigid, and the patella absent. There was bilateral talipes equinovarus. The deformities of the hands and feet had yielded well to treatment.

Case of Multiple Congenital Deformities.—Mr. R. C. Elmslie.—The patient was a girl, aged 5 years. The head, neck, trunk and abdomen showed no deformity nor wasting. The upper limbs hung at the sides with elbows extended, forearms in a position of mid-pronation and wrists flexed, the whole limb being rotated in. The pectoral muscles appeared well developed, but the deltoid and posterior scapular muscles were much wasted. The muscles of the upper arm were moderately developed; those of the forearm and intrinsics of the hand were very feeble. The wrist-joints were flexed to a right angle, the fingers being held fully extended. The right and left arms were very similar in appearance and in the mobility of the joints, but the left was slightly smaller and shorter than the right. Most active movements were possible through a small range. At the shoulder-joint abduction could be carried nearly to a right angle, strength being poor. Adduction was fairly strong, being the movement most used by the child. Rotation in and out were both present, but very feeble. The action of the serratus magnus appeared to be normal. Extension of the elbow was present but weak. Flexion in the right arm could be carried out from the fully-extended position to an angle of 35°. In the left elbow the movement could only be carried to 160°. These movements through this limited range were fairly strong. Pronation of the forearm was complete; supination weak and possible only through a small range. At the wrist-joint there was a small range of weak, active extension. The flexor muscles appeared, however, to be quite strong. The movements of the fingers were very limited, but extension, flexion, abduction and adduction of all the fingers appeared to be present, being better in the right hand than in the left. The adductors of the thumbs worked quite strongly; the child was in the habit of holding things between the thumb and the palm or between the index and middle fingers. The latter fingers are concave towards each other, probably as the result of this use. In the lower limbs there was a dorsal dislocation of both hips, the knees were fully extended, and the right could not be flexed at all; the left could be flexed voluntarily through a small angle. The feet showed a talipes equinovarus partially corrected by operation. The muscles of the lower limbs were weak throughout—those on the right side being the worse. No knee-jerks could be obtained. Electrical examination was too difficult and painful to permit of completion. X rays showed a doubtful dislocation of the right shoulder and a dislocation of the head of the right radius forwards, in addition to the dislocation of the hips. The individual bones appeared to be well formed and five carpal bones were present on either side.

The condition of the upper limbs in this case was one which Mr. Elmslie had seen several times and had been in the habit of calling "seal-flapper" deformity. In the cases that he had seen the condition of the lower limbs had varied. In most there had been a congenital talipes, in some a dislocation of the hips, and in some stiffness of the knees. In one case there was a spastic condition of the lower limbs. The deformities of the upper limbs formed a sufficiently definite type to deserve differentiation under a specific name, although the pathology of the condition was apparently unknown.

Case of Sterno-mastoid Tumour in a Child Born by Cæsarean Section.—Mr. H. A. T. Fairbank.—This child, aged 4 months, presented a hard fibroid mass in the lower part of the right sterno-mastoid. There was no torticollis. The mother was extremely ill, with vomiting, convulsions, albuminuria, and finally coma. Cæsarean section was performed to save her life, and in this the operation was successful. The head was tightly engaged in the pelvis, and considerable difficulty was experienced in extracting it. The injury of the sterno-mastoid muscle most likely occurred in disengaging the head from the pelvis, and not as the result of uterine contraction during the removal of the child.

Case of Arthritis of the Knee with Persistent Flexion.—Mr. E. Laming Evans.—This girl was aged 17 years. At the age of two she developed an arthritis of the right knee, in which flexion deformity was a prominent symptom. She had been treated in several hospitals by various methods, but the flexion remained. A recent slight injury necessitated rest in plaster-of-Paris in a general hospital. The knee was now flexed at an angle of 20°, the ankylosis being fibrous and a very small range of movement remaining. X-ray examination showed that the epiphyseal cartilages were synostosed. In the external condyle of the femur there was a translucent area suggesting an old abscess. The joint line was hazy, and showed an obliquity downwards and inwards from collapse of the external condyle.

Case of Traumatic Myositis Ossificans.—Mr. W. T. Gordon Pugh.—About eight weeks ago the patient, a boy, aged 15 years, whilst playing in a gymnasium, caught his foot in a mat and fell sideways on to his hand, dislocating the left elbow. This appeared to have been completely reduced without an anæsthetic. Cold compresses were applied and the arm slung in a flexed position. About a fortnight later, the doctor, finding that any attempt at movement caused pain, administered chloroform, moved the joint, and fixed the elbow in an extended position upon a splint. For a few days the elbow was flexed and extended several times each morning, but the movement possible became steadily less in extent and more painful.

When he was admitted to hospital a few days ago the arm was fixed with the elbow within 40° of full extension, and the forearm in a position midway between pronation and supination. There was considerable swelling around the elbow, due chiefly to a firm thickening, extending from the olecranon upwards for about 3 in., and to a similar thickening in front of the joints. X-ray examination showed considerable areas of opacity in positions corresponding to the triceps, brachialis anticus and supinator brevis.

The history was that usually associated with a traumatic myositis ossificans, and the treatment must evidently take the line of securing absolute rest, so as to prevent the development of additional new bone and to assist the absorption of that already present. In the presence of such extensive alterations from the normal an ultimate stiffness of the joint seemed not improbable, and it was therefore advisable to get the elbow into a standard position for fixation.

Scoliosis of Uncertain Origin.—Mr. P. MAYNARD HEATH.—The patient was a girl, aged 10 years. She had a fall in the playground in 1918; the accident was apparently trivial, but no details were available. Very little notice was taken of it, and the child was not incapacitated. Some months later the mother noticed that the back was not straight.

In the erect position there was very little abnormal to be seen, but when the spine was flexed the whole trunk was carried clearly to the left. At the same time rotation occurred, so that the right lumbar region became prominent, and a secondary curve, convex to the left, was produced in the dorsal region. Flexion of the spine directly forwards or to the right was impossible. There were no nervous symptoms, and the condition was not progressive. The hip-joints and lower limbs were normal, and there was no evidence of abscess formation. The deformity of the spine was obviously due to some lesion in the lower lumbar vertebræ. X rays showed that the articular processes between the fourth and fifth lumbar vertebræ on the left side were apparently fused into a structureless mass of dense bone, and that the fourth lumbar vertebra was set obliquely upon the fifth. No fracture of the articular processes could be seen. There was a deficiency in the laminæ of the fifth lumbar vertebra, and its left transverse process was longer than the right, and came into contact with, and was possibly joined to, the left lateral mass of the sacrum. The bodies of the vertebræ were normal in outline, and no rarefaction of bone was visible. The X-ray appearances might be due to fracture, congenital abnormality, or caries.

If the cleft in the laminæ of the fifth lumbar vertebra was due to fracture, it was possible that the articular processes between the fourth and fifth lumbar vertebræ had been fractured and had subsequently fused. The slightness of the accident was somewhat against this view. On the other hand, the increase in size of the left side of the fifth lumbar vertebra was clearly developmental, and suggested that the cleft in the laminæ of that vertebra and the condition of the affected articular processes were also developmental. Caries seemed improbable, in view of the symptoms and X-ray appearances. The child had been treated for six weeks in a plaster jacket by another surgeon. Since then she had been given exercises and massage, with improvement in her comfort and general health, but without any influence on the lateral deviation of the spine.

Abstracts from Current Literature.

Diseases of the Alimentary System.

Dental sepsis in children (*'Lancet,'* 1920, I, *p.* 303).—**F. St. J. Steadman** attributes retarded mental and physical growth, malnutrition, anæmia and loss of sleep to carious teeth. Gastro-intestinal disorders are common. Glands in the drainage area of decayed teeth become readily enlarged on trifling injury, become fibrosed and eventually tubercular. Sepsis in deciduous teeth causes hypoplasia of the permanent set. Carious teeth, by disuse, set up gingivitis which affects the periodontal membrane of the permanent tooth. Steadman advocates wholesale extraction of deciduous teeth in which the pulp is infected. Sterilising and capping the pulp is unsound practice, for the pulp eventually suppurates and dies under the filling, with the result that the teeth remain tender and are not used for mastication. The antagonist should also be removed, for it is functionless and *débris* collects round it, causing gingivitis. In cases in which the four lower deciduous molars are carious and the first upper but not the second, the latter (in children under six) are left in position until the permanent molars have erupted and occluded. As a general rule extraction of teeth does not adversely influence the growth of the jaw, and extraction from one side or from the upper and not from the lower jaw does not lead to a lop-sided appearance or inferior or superior protrusion. Another argument is that early extraction of the deciduous teeth leads to forward movement of the six-year-old molar, thus causing crowding and irregularities later on. If the teeth are extracted before the permanent molars this will take place, but can be met by extracting one of the permanent teeth in each corner of the mouth. These teeth may be either the four six-year-old molars or the four premolars. If extraction takes place after the permanent molars have occluded there will be little forward movement. The author complains bitterly of the hostility of the medical profession to radical dental treatment.

CHRISTOPHER ROLLESTON.

Influence of diet on teeth-formation (*'Lancet,'* 1918, II, *p.* 767).—**M. Mellanby** carried out an investigation with the object of studying (1) the factors involved in the development of sound teeth and of the growth of the jaws in relation to the size of the teeth; (2) the factors bearing on the immunity of erupted teeth to caries and other diseases. The results may be summarised as follows: (1) A diet containing in abundance those articles with which the fat-soluble A accessory food factor is associated, *e.g.* cod-liver oil, butter, etc., allows the development in puppies of sound teeth. (2) A diet otherwise adequate but deficient in the substances with which fat-soluble A is associated brings about the following defects in puppies' teeth: (*a*) delayed loss of deciduous teeth; (*b*) delayed eruption of the permanent dentition; in some cases the delay in the eruption of the permanent teeth is more marked than the delay in the loss of the deciduous teeth; (*c*) irregularity in position and overlapping, especially of the incisors; (*d*) partial absence of or very defective enamel; (*e*) low calcium content—the deficiency in calcium salts may result in the teeth being so soft that they can be cut with a scalpel. (3) The evidence makes it clear that this is an instance of diet affecting the teeth from the inside and is independent of bacterial sepsis and other oral conditions associated with food. (4) These results cannot be considered as being due to acute illness or "malnutrition," for (*a*) the improvement to the teeth by the addition of fat-soluble A containing substances (animal fats, etc.) is as characteristic as the deleterious effect of a deficient diet; (*b*) there is evidence that the defective teeth are most pronounced in the rapidly growing puppies, and it is difficult to associate rapid growth with illness or "malnutrition" as generally understood. (5) This work, taken in conjunction with the experiments of E. Mellanby on rickets, puts the close relationship between hypoplastic teeth and rickets on to an experimental basis.

J. ALLAN.

Abnormal conditions of enamel in cases of malnutrition (*'Lancet,'* 1918, II, *p.* 456).—**J. L. Dick** points out that there are many abnormalities to be found in the enamel of teeth in cases of malnutrition, *e.g.* hypoplasia, honeycombed teeth, horizontal bands of thickened enamel and transverse grooves in the enamel, chalky appearance of the enamel, and brown lines of Retzius. Of 281 poor-class children examined, 114, or 40 per cent., had defective enamel, as compared with 13 per cent. among better-class children. It is important to note that in hypoplasia and in cases where the chalky patches and the brown lines of Retzius were found the teeth which suffered chiefly were—(1) the central incisors, (2) the lateral incisors, and (3) the canines, in this order of frequency. The calcification of the enamel of the crowns of these teeth goes on during the first two years of the child's life, so that these defects are due to errors of nutrition affecting the child at this early period when the rate of growth, and notably that of the brain, is relatively enormous. Rickety conditions are especially operative at this period. J. ALLAN.

Pharyngeal spasm simulating loss of appetite in children (*'Paris méd.,'* 1919, II, *p.* 449).—**E. Weill** has frequently found that a spasm of the pharynx is the cause of a child refusing its food. The condition is most frequent between the ages of 2 and 5 years, but it may occur as early as 18 months or as late as 9 years. It is found both in boys and girls. It is sometimes, but not always, associated with nervous antecedents. It may first appear after weaning, or occur at a later stage when the child has been put on ordinary diet. Sometimes it develops at a relatively advanced age after an attack of influenza, whooping-cough or erythema nodosum. It is either continuous or attended with slight remissions. It may last for years, ordinary treatment not causing any change. Weill has found that the most effective cure is the passage of a rubber catheter. A single *séance* may be sufficient, but in some cases the instrument may have to be passed two or three times at intervals of a few days. In cases in which catheterisation is refused, cold compresses should be applied to the front of the neck for thirty to forty minutes, the compresses being renewed every ten minutes, followed by massage of the floor of the mouth and suprahyoid region. During a meal, if the child is slow in swallowing, the finger should be pressed upon the trachea when the sensation of suffocation produces a movement of deglutition. J. D. ROLLESTON.

Congenital stenosis of the œsophagus (*'New York Med. Journ.,'* 1918, CVIII, *p.* 109).—**H. Apfel** records a case in a girl, aged 3 years, who was in all respects a healthy child, but had always vomited once or twice daily after meals. X-ray examination showed a marked degree of narrowing of the lower end of the œsophagus with a great dilatation immediately above it. Another child, a male, aged 7 days, weighing 7 lb. at birth, vomited after attempts to nurse. When seen it weighed only 4 lb. and was very emaciated. A catheter would only pass 5 in. A barium meal was seen by the X rays to stop at the level of the fifth cervical vertebra. A gastrostomy was done but the infant died two days later.

J. PORTER PARKINSON.

Congenital stricture of the œsophagus (*'Amer. Journ. Dis. Child.,'* 1920, XIX, *p.* 144).—**T. L. Morse** records three cases of this condition. The first two were brothers aged 6 years and 25 months respectively. The eldest child was breast-fed and seemed well in every way until an attempt was made to feed him when he was one year old. It was then found that he could not take solids without vomiting; he was therefore nursed until he was $2\frac{1}{2}$ years old. Since then he had been able to take liquids and soft solids, but no solid food. Skiagrams showed an enlargement of the œsophagus at the sterno-clavicular area, and on œsophagoscopy an obstruction was found 6 in. from the incisor teeth, and some constriction at 7 in. and onwards. The stricture was dilated and the vomiting ceased. Further dilatation would be necessary. In the younger child the vomiting had occurred four or five times a day ever since birth. A skiagram showed a narrowing of the lower third of the œsophagus, with dilatation above. A stricture was found on œsophagoscopy, 17·5 cm. from the incisor teeth. Dilatation was considered inadvisable and gastrotomy was done. Death took place a week later. The third case was in a girl, aged 3 years, who began to vomit soon after birth, the vomiting occurring immediately after food. There were long intervals in which she did not vomit milk or any liquid food, but she always vomited solid food. Œsophagoscopy showed a stricture $7\frac{1}{2}$ in. from the incisor teeth. There was no marked dilatation above the stricture. Bougies were passed up to No. 16. She was dilated repeatedly, and after eight months' treatment had no symptoms.

J. D. Rolleston.

The education of the organic functions of infancy ('*Med. Press.*' 1919, I, *p.* 219).—**E. Pritchard** deals with the education of the digestive functions in infancy. It is very important to set the various neuro-muscular mechanisms in motion in the right way at the beginning of life. The team work of the various groups of muscles concerned in the motor functions of the alimentary tract can only be perfected by constant repetition under the best possible conditions. Good habits of action can be acquired just as easily as bad ones, provided that the right experience and practice are afforded. The author indicates some of the directions in which faulty action of the motor mechanism of the stomach, etc., may prove hurtful. J. Allan.

Appendicitis in children ('*New York Med. Journ.*,' 1918, CVIII, *p.* 501).—**J. O. Bower** calls attention to the difficulty of diagnosis in young children. At the Samaritan Hospital the percentage of cases without peritonitis necessitating using a drainage-tube was only 10 and the mortality was four times that of the adult. In children appendicitis is often associated with infectious diseases, such as influenza, measles, acute rheumatism, tonsillitis or typhoid fever. Foreign bodies, fæcal concretions and intestinal parasites are more often found than in adults. The symptoms are the same as in the adult. A high leucocyte count is of great value when pneumonia is excluded. Ptomaine poisoning resembles appendicitis, but shows diarrhœa rather than constipation, absence of leucocytosis, and the vomiting ceases after stomach lavage. Acute pyelitis is distinguished by a careful examination of the urine. Intussusception produces blood-stained mucous stools, no leucocytosis or fever and no abdominal rigidity. Pneumonia may be diagnosed, but its symptoms and signs ought to prevent this. The writer mentions cases of acute perforation of the stomach and acute pancreatitis resembling appendicitis. Abdominal tuberculosis is present in 90 per cent. of the cases in which appendicitis is diagnosed in a child who has had previous similar attacks.

J. Porter Parkinson.

Congenital defects in the lower bowel recurring in three successive children in one family (*'Med. Journ. Austral.,'* 1919, I, *p.* 216).—**A. L. Walker.**—In two cases, a male and female child, great abdominal distension occurred shortly after birth. Laparotomy showed absence of the large intestine. Death occurred in twenty-four and eighteen hours respectively. The third case died soon after birth. A blind end in the rectum was found less than 5 cm. from the anus. Operation was refused. F. R. B. ATKINSON.

Case of congenital megacolon (*'La Pediatria,'* 1919, XXVII, *p.* 513).—**A. Dalla Valle** reproduces the description of a specimen in the Museum at Parma by G. Inzani in 1882, which is identical with cases which Hirschsprung first published in 1888 of the disease with which his name is associated. A boy, aged 5 years, had obstinate constipation since birth, from fifteen to twenty days elapsing between the evacuations, the abdomen progressively enlarging to 82 cm. in girth. At the autopsy the circumference of the colon was 37 cm., the upper part contained gas and the lower part a hard fæcal mass weighing 125 grm. together with some loose fæces. The mucous membrane was reddened and the follicles turgid and hard. The mucosa of the small intestine was normal, the peritoneum smooth and containing 100 grm. of clear serum. VINCENT DICKINSON.

Dilatation of the colon in children (*'Amer. Journ. Dis. Child.,'* 1920, XIX, *p.* 169).—**A. E. Meyers** believes that in addition to muscular hyperplasia there is another condition concerned in dilatation of the colon in children, viz. spasm due to an excess of starch in the diet. He reports six cases in children aged from 4 to 9 years, in whom constipation was cured by a starch-free diet and the administration of atropine sulphate, 5 drops being given thrice daily, each drop containing $\frac{1}{1000}$ grm. J. D. ROLLESTON.

Prophylactic treatment of constipation in children (*'Lancet,'* 1919, I, *p.* 459).—**V. Borland** emphasises the importance of cultivation of regular habits from earliest infancy. Feeding times should be regular. The bowels tend to move more readily after a feed, and advantage of this should be taken by training the child into the habit of a morning stool after the bath feed. If there is any tendency to constipation a little gentle abdominal massage may be useful. Constipation in the mother should always be treated. The author warns against the use of the binder after the navel has healed. The improper use of castor oil for children is discussed. Careful attention to dieting is very necessary. J. ALLAN.

Diseases of the Nervous System.

Little's syndrome (*'La Pediatria,'* 1920, XXVIII, *p.* 72).—**A. F. Canelli** gives details of two cases, the first of a man, aged 33 years, in whom the disease dated from the age of 4 months, starting from an attack of afebrile convulsions, the other in a boy, aged 11 months, the onset probably arising during the early months of extra-uterine life. In both cases syphilis was excluded. Besides contractures of the limbs there were, in the first case, left-sided kyphoscoliosis, idiocy, bilateral atrophy of the face and strabismus; in the second, defective intelligence and bilateral blindness. In the first case the affection of the limbs was limited to the lower extremities, while in the second the arms were also involved with increased reflexes, this extensive paresis being rare in genuine Little's disease. There was no myocarditis in either case. In the first case there were large subdural hæmatomata, diffuse adhesive pachymeningitis and chronic thrombo-sinusitis; in the other, cerebral hæmorrhages, chronic cerebral meningitis and thrombo-sinusitis. In both there was marked hydrops ventriculi, hypoplasia of the nerve-cells and compression of the pyramidal tracts; the lesions were more conspicuous in the brain than in the spinal cord. Both were probably the result of an infective process. VINCENT DICKINSON.

Infantile spastic paraplegia ('*La Pediatria,*' 1920, XXVIII, *p.* 257).—**R. Vaglio** records 46 cases of infantile spastic paraplegia which were observed from 1913 to 1918 at the Naples University Pædiatric Clinic. One was due to trauma at birth, in 25 syphilis could be incriminated (in 19 with certainty, in 6 with great probability), in 3 the cerebral lesion was connected with measles, 4 were associated with whooping-cough, influenza, typhoid and empyema respectively, and in 12 the origin could not be determined. A certain proportion of the latter were possibly due to Heine-Medin's disease, and in others the possibility of cerebral lesion of a tuberculous nature could not be excluded. In 26 cases the paralysis was preceded and generally accompanied by convulsive attacks often of a definitely epileptic character. The lesion affected the two limbs on one side almost completely in 16 cases, in 22 it was most pronounced in the upper limb and in only 8 in the lower limb. In 27 cases the right side was affected and in 19 the left side. Only 6 cases were associated with mental disturbances, varying from the severest forms of idiocy to a mere retardation in intellectual development. In only 2 cases were athetotic movements present and in 1 choreic movements of the affected limbs. The onset was sudden in 29 cases and gradual in 16. J. D. ROLLESTON.

Syringomyelia in infancy ('*La Pediatria,*' 1920, XXVIII, *p.* 226).—**G. di Giorgio** describes two cases in children, aged 9 years, both of whom presented trophic changes in the skin and subcutaneous tissue, changes in thermic and painful sensation, and amyotrophia and motor disturbances. There were facial hyperidrosis and dermographism in one case and also the "succulent" hand described by Pierre Marie and Marinesco. The diagnoses of muscular dystrophy, polyneuritis, amyotrophic lateral sclerosis and hæmatomyelia were negatived in both cases. The influence of traumatism in the first case was not sufficient to admit the possibility of it as a causal agent. VINCENT DICKINSON.

Boveri's reaction in the cerebro-spinal fluid ('*Riv. di Clin. Pediat.,*' 1919, XVII, *p.* 113).—**A. Bardisian** writes on Boveri's reaction for detecting pathological conditions of the cerebro-spinal fluid. He performs the test by taking 1 c.c. of cerebro-spinal fluid and adding to it very gently 1 c.c. of a 10 per cent. solution of potassium permanganate. He first notices the "zone" of junction of the two fluids. In some cases the permanganate is reduced at once in the zonal layer. This constitutes a positive reaction. If this does not occur he mixes the fluids. After an interval the permanganate is reduced and the solution becomes yellow. He classifies the reactions into strong, medium, or weak, according to the interval required for the reduction, *i. e.* 2–3 minutes, 3–4 minutes and 5–6 minutes respectively. He finds that the reaction does not correspond accurately to the presence of lymphocytes in the cerebro-spinal fluid. He obtains the strongest reactions in the case of myelitis. He quotes several cases in detail where children suffering from well-marked symptoms of meningitis gave a negative reaction and afterwards proved to be suffering from broncho-pneumonia or enteric fever. The article concludes with a long list of cases of this nature showing a negative result in acute fevers, pertussis, gastro-enteritis and other conditions. He states that the presence of a small quantity of blood in the cerebro-spinal fluid does not interfere with the test, and also that he has not got a positive reaction in every case in which the "Nonne-Apelt" reaction was positive. SIDNEY NATHAN.

Case of streptothrix meningitis (*'La Pediatria,'* 1920, XXVIII, *p.* 504).—**S. Fabris** describes the case of a male infant, aged 9 months, the subject of congenital syphilis, who in the course of a broncho-pneumonia presented symptoms of meningitis. Lumbar puncture showed besides increased tension a slight leucocytic reaction and the presence of streptothrix. In the absence of further opportunity for observation it was impossible to decide whether the case was one of secondary infection to a pre-existing broncho-pneumonia, or whether the whole clinical picture, meningeal and pulmonary, was due to the streptothrix. VINCENT DICKINSON.

Recovery in a case of influenzal meningitis (*'Med. Journ. Austral.,'* 1920, I, *p.* 104).—**W. F. Litchfield** has seen only one case of this kind recovered, viz. in a girl, aged $1^{11}/_{12}$ years. The influenza bacillus was cultivated from the cerebrospinal fluid obtained by lumbar puncture.
F. R. B. ATKINSON.

Two cases of bulbar paralysis in children (*'La Pediatria,'* 1920, XXVIII, *p.* 408).—**F. Amenta** describes two cases in children of 7 and 10 years of age. All the symptoms described by Duchenne were present, viz. motor and amyotrophic phenomena, disturbances of speech, deglutition, respiratory and cardiovascular systems, and in one case deafness.
VINCENT DICKINSON.

Encephalitis lethargica (*'Dub. Journ. Med. Sci.,'* 1920, *Fourth Series*, 1, *p.* 24)—**G. E. Nesbitt** reports a case in a boy, aged 15 years, who was admitted to hospital in a completely unconscious condition. Recovery took place. J. ALLAN.

Two cases of encephalitis lethargica (*'La Pediatria,'* 1920, XXVIII, *p.* 307).—**O. Cozzolino** describes these cases, aged 6 and 8 years. In the first there were the classical symptoms of headache, fever, somnolence, ptosis, strabismus, facial paresis, slow utterance and choreiform movements of the limbs. The second was an example of the polymorphism of the disease. There was isolated paresis of the trochlear nucleus with consequent turning of the eyeballs outwards and downwards—a phenomenon not usually observed in lethargic encephalitis, in which the oculomotor nerve is generally affected with consequent ophthalmoplegia externa and ptosis. VINCENT DICKINSON.

Treatment of epidemic encephalitis (*'La Pediatria,'* 1920, XXVIII, *p.* 319).—**S. Maggiore** treated nine children with a vaccine prepared from young cultures of Pfeiffer's bacillus in progressive doses. He claims as a result: modification in the intensity of the lethargy, cardiovascular and ocular symptoms, early return of sensibility and reflex activity, rapid defervescence by crisis, or by lysis in cases with hyperpyrexia or sub-febrile temperature, and progressive diminution of the albumin in the cerebro-spinal fluid. He concludes that the disease is influenzal in nature and that the vaccine acts by immunity, or if the disease is not influenzal, that the vaccine acts by means of protein-therapy. VINCENT DICKINSON.

Two cases of musculo-spiral paralysis of malarial origin (*'La Pediatria,'* 1920, XXVIII, *p.* 497).—**F. Fonzo** describes the case of a girl, aged 7 years, who developed weakness in the right hand after an attack of tertian fever. The right hand was held in a position of flexion to almost a right angle with the forearm, which was also held slightly flexed on the arm. All movements of the forearm were possible, those of the hand limited, especially extension. Objects were grasped with difficulty. All passive movements were full and free, and there was no spasm or loss of sensation. There was slight atrophy of the palm, interossei and fingers. The second case was that of a boy, aged 12 years, who about twelve days after a malarial attack developed slight flexion of the fingers and thumb of the right hand with adduction. Active movements of extension of fingers and abduction of the thumb were impossible. Active pronation and supination were intact. Passive movements were normal as well as cutaneous sensibility.

VINCENT DICKINSON.

The ætiology of chorea (*'New York Med. Journ.,'* 1919, CIX, *p.* 265).—**S. Graves** and **B. H. Paige** state that evidence accumulates to indicate that chorea is the result of bacterial infection. They consider the embolic theory of Kirkes is not comprehensive enough. Morret Floyd tested the cerebrospinal fluid and bacteriologically the results were always negative, as also were blood-cultures. From one case a streptococcus was obtained which produced in rabbits endocarditis and lesions in the brain and meninges like those found in cases of chorea. The writers make no mention of the researches of Poynton and Paine, and they conclude that chorea is due to the action of bacterial toxins, perhaps a selective action, upon central nerve-cells in persons whose inherited nervous instability makes them more readily subject to such toxic action. J. PORTER PARKINSON.

The ætiology of Sydenham's chorea (*'La Pediatria,'* 1919, XXVII, *p.* 579).—**P. Foti** tested the Wassermann reaction in 17 cases: in 13 the reaction was positive, in 3 there were other clinical manifestations of syphilis, and in 1 only could it be excluded with any certainty; this makes a percentage of 95. The author concludes that syphilis is not a determinate, but the principal predisposing cause. VINCENT DICKINSON.

Re-education in the treatment of chorea (*'New York Med. Journ.,'* 1919, CIX, *p.* 842).—**M. Grossman**, in addition to the ordinary treatment, recommends this method: Beginning when the fever has passed off, diaphragmatic breathing should be practised, as it helps to relaxation of the muscles. Passive movements of the muscles of the arms, legs, face, etc., should be done till the muscles relax. Later active movements are begun, simple movements regulated by counting, then movements resisted by the operator. When all these can be done satisfactorily in the prone position education in standing and walking is given.

J. PORTER PARKINSON.

Effect of calcium intravenously on electrical excitability in spasmophilia (*'La Pediatria,'* 1919, xxvii, *p.* 129).—**S. Maggiore** experimented on eight children with marked tetany, using a sterilised solution of chloride of lime injected intravenously in doses of 1–5 cgrm. He found that within a short time the galvanic excitability of the nerves was lessened, the maximum effect occurring in the first twelve hours, and especially three hours after the injection. After twelve hours the effect began to pass off. The cathodal opening contraction was always normal, the maximum effect being seen at the cathodal closure. The effect of the injections was constant, and the use of lime in this way might be adapted to therapeutic measures, especially in severe cases. No untoward effects were observed.

VINCENT DICKINSON.

Diseases of the Urogenital System.

Acute nephritis in childhood (*'Journ. Amer. Med. Assoc.,'* 1919, LXXIII, *p.* 1747).—**L. W. Hill** believes that far more cases of acute nephritis in children are secondary to tonsillitis than to scarlet fever or any other acute infectious disease. It is not certain whether the nephritis is produced by the toxins of the organisms causing the primary acute disease or whether the kidney itself is invaded by micro-organisms. The nephritis does not usually appear during the period of sore throat and fever, but develops about a week after the patient is up and about and apparently well. In a series of 49 cases of acute nephritis in children 25 were of a hæmorrhagic type characterised by passage of very bloody urine and 24 of an exudative type characterised by marked œdema. In most of the hæmorrhagic cases tonsillitis was the causal agent, as it was also in the exudative cases, but far more of the exudative cases were of unknown ætiology than were cases of the hæmorrhagic type. J. D. ROLLESTON.

The meningeal onset of acute nephritis (*'Arch. Lat. Amer. de Ped.,'* 1919, XIII, *p.* 501).—**J. Bonaba** records two cases in children aged 11 years, in whom an attack of acute nephritis of unknown origin was ushered in by meningeal symptoms. The cerebro-spinal fluid was normal, and examination of the urine showed casts and blood. Rapid improvement followed lumbar puncture and recovery took place in a few days.

J. D. ROLLESTON.

Acute hæmorrhagic nephritis secondary to middle-ear infection (*'Journ. Amer. Med. Assoc.,'* 1920, LXXIV, *p.* 887).—**J. W. Shuman** reports a case in a girl, aged 3½ years. After ligature of the external jugular vein and clearing out the lateral sinus the urine became normal, but a slight relapse occurred when the mastoid incision broke down.

J. D. ROLLESTON.

The heart and arterial pressure in nephritis in infants (*'Journ. de Méd. de Paris,'* 1919, XXXVIII, *p.* 107).—**P. Nobécourt.**—The greatest varations are seen in acute attacks of nephritis on the top of chronic disease. Frequently in chronic disease the tension is not much altered or the heart much dilated. Hydræmia and retention of chlorides may raise the pressure, but they are not, as a rule, responsible. Hypertension is responsible for convulsions in nephritis, and also for the cardiac dilatation, gallop rhythm and enlargement of the liver seen in acute nephritis. The treatment is to diminish the hypertension by bleeding, and restriction of fluids.

J. Porter Parkinson.

The bone deformities of renal dwarfism (*'Lancet,'* 1920, I, *p.* 18).—**H. Barber** has observed eight cases of renal dwarfism amounting in some instances to true infantilism associated with interstitial nephritis. Development was fairly normal until five or six years of age, after which growth was very much retarded. Bone deformities, which occurred in five cases, appeared to develop about the age of puberty. In type the changes appeared to be very similar to those of rickets. The wrists and knee-joints were most noticeably affected, but some swelling was palpable at the junction of the ribs and cartilages. Genu valgum was present in four cases.

J. D. Rolleston.

A rare case of hydronephrosis in a child (*'La Pediatria,'* 1919, XXVII, *p.* 590).—**N. Laverone** reports a case of hydronephrosis in a boy, aged 4 years, secondary to cicatricial stenosis of the ureter caused by a calculus. The enlargement of the abdomen and the removal of a clear, colourless and non-albuminous fluid by paracentesis at first gave rise to the diagnosis of echinococcus cyst of the spleen. Nephrectomy was followed by recovery.

J. D. Rolleston.

Colon bacillus pyonephrosis in early infancy (*'New York State Journ. Med.,'* 1919, XIX, *p.* 373).—**F. Williams** is of opinion that the colon bacillus has high pathogenicity for the kidney substance in young infants, in whom the activities of this organism are less inclined to be limited to the pelvic portion. There is evidence at hand that this infection claims a much higher mortality among the very young than is the case in older children. It is evident, also, from cases reported in literature, that in early infancy males are frequent victims, and that the generally recognised preponderance of female cases does not obtain in the very young.

J. Allan.

Three cases of malignant tumour of the kidney (*'Riv. di Clin. Pediat.,'* 1919, XVI, *p.* 619).—**F. Rossi** reports three cases: (1) A boy, aged 2 years, in whom the growth was a large sarcoma and could not be removed by laparotomy owing to numerous tough adhesions, death taking place a week later. (2) A boy, aged 2 years. The prominent symptom was anæmia with hæmoglobin 60 per cent., polynuclears 78 per cent., eosinophils 1 per cent., lymphocytes 16 per cent. The urine was acid with a faint haze of albumin. The renal tumour occupied the splenic region, and was successfully removed by operation; histologically it was a round-celled sarcoma. (3) A girl, aged 8 years, with an ovoid tumour in the left hypochondrium, not moving with respiration. The urine was acid, with a trace of albumin. Blood-count—82 per cent. neutrophil polymorphonuclears, lymphocytes 7 per cent. The tumour was successfully removed.

Vincent Dickinson.

Congenital stenosis of both ureteral orifices (*'Journ. of Urol.'* 1920, IV, *p.* 123).—**I. M. Wason.**—A poorly nourished male infant, aged 7 months, was admitted to hospital for diarrhœa, and died fourteen days later without any physical signs. At the necropsy double hydronephrosis was found with dilated tortuous ureters, which ended in cystic dilatations in a small bladder. Microscopical examination showed that the ureteral orifices, which were not visible to the naked eye, were stenosed, measuring only $\frac{1}{8}$ to $\frac{1}{9}$ mm. in diameter. There was also a valve in the prostatic urethra, extending from the lower end of the veru montanum to the right urethral wall. Though valve formation in the lower prostatic urethra is probably the commonest cause of double hydronephrosis in children, in the present case the valve, being unilateral, did not cause sufficient obstruction to the flow of urine to produce dilatation of the upper prostatic urethra and of the bladder. The dilatation of the ureters and hydronephrosis were due to the stenosis of the ureteral orifices, which were possibly the result of a partial overgrowth of epithelium and muscle in embryonic life.

J. D. Rolleston.

The pathogenesis of essential enuresis ('*La Pediatria*,' 1919, XXVII, *p.* 567).—**U. Provinciali** describes ten cases in which careful radiological examinations were made. The majority of cases showed deformities of the lumbo-sacral portion of the vertebral column. In only a small percentage were there any other degenerative stigmata. Since the syndrome disappears usually in the course of time, it remains to be proved whether the anatomical lesion becomes modified or lessened at the same time. It must be admitted that, corresponding to an anatomical change in the lumbo-sacral segment there is a dysplasia, hitherto unrecognised, of the spinal cord corresponding to the urinary centre. Spiller's idea that traumatism, dragging, or osseous lesions can directly influence the radicular processes is not admissible. The author expresses the hope that these preliminary observations on the anatomical substratum of a disease hitherto considered entirely functional may stimulate further researches in this affection.

Vincent Dickinson.

Urethral polypus ('*Nederland. Tijdschr. v. Geneesk.*' 1919, II, *p.* 2114).—**G. O. E. Lignac** reports a case in a boy, aged 9 years, who presented a mushroom-shaped growth protruding from the urinary meatus. The patient suffered from frequent erections of long duration and difficulty in micturition. On removal, the polypus was found to be a fibroma. Death took place about a month after the operation. J. D. Rolleston.

Primary sarcoma of the prostate ('*Brit. Med. Journ.*,' 1919, I, *p.* 378).—**F. Nicholson** and **E. M. Hainworth** report a case in a boy, aged 3½ years. The growth was removed, but recurrence soon took place with fatal result. J. Allan.

Reviews.

THE DISEASES OF INFANTS AND CHILDREN. By J. P. CROZER GRIFFITHS, M.D., Ph.D., Professor of Pædiatrics in the University of Pennsylvania, etc. With 436 illustrations, including 20 plates in colours. Vol. II. Philadelphia and London: W. B. Saunders Company, 1919. Price 72s.

THE object of the writer, whose name is well known to readers of this Journal, has been to present a review of the subject of medical pædiatrics as complete as seemed desirable without attempting to make it encyclopædic. We have no hesitation in saying that Dr. Griffith has admirably fulfilled his task, and congratulate him on having produced the most complete and up-to-date text-book on children's diseases in the English language, and one which may challenge comparison with any system of pædiatrics by English or foreign writers. The work, which consists of two volumes containing an aggregate of about 1500 pages, is well printed on excellent paper and lavishly illustrated. Each volume possesses a separate index and the second volume a general index as well.

A quarter of the first volume is devoted to the consideration of general subjects, including the anatomy and physiology of early life, the feeding of infants and children, symptomatology and diagnosis, morbidity and mortality, and the therapeutics of early life. The chapter on anatomy and physiology contains useful tables of the weights and measurements of children, the metric and English system being both employed, as throughout the work. In the chapter on breast-feeding Dr. Griffith expresses the view that an interval of four hours between the feeds may be too great, and that the shorter intervals which have so long been in vogue should not be too readily abandoned. In a criticism of the caloric method, he states that its greatest disadvantage is the tendency of the physician to take too little account of the relative assimilability of the food elements, and to regard it as a matter of indifference which is employed so long as the food contains sufficient calories. A chapter is devoted to special mixtures with personal names, mostly of foreign origin, and proprietary foods, the employment of which Dr. Griffith regards as one of the most pernicious factors of the time in the feeding of infants. The author's attitude to the therapeutic value of alcohol is shown by his statement that it is given far too frequently by many physicians and in absolutely small amounts by others.

In the description of the various diseases the author's own wide experience is supplemented by numerous quotations from the literature, the references to which are supplied in a uniform bibliographical style at the foot of the page.

J. D. R.

MALARIA AT HOME AND ABROAD. By S. P. JAMES, M.D., D.P.H (Lieut.-Colonel I.M.S., retired). Illustrated with one coloured map and 104 full-page and text-figures. London: John Bale, Sons & Danielsson, Ltd., 1920. Price 25s. net.

THE present work, we learn from the preface, is intended as an elementary guide to medical men and administrators who have to deal with malaria at home or abroad during peace or war. The parasitology, symptomatology, diagnosis, prevention and treatment of the disease are fully considered, and special chapters are devoted to the study of mosquitoes and epidemiological observations in England and the tropics. Of special interest to readers of this Journal are pp. 150 *et seq.*, on malaria in children. Colonel James negatives the view that children suffer less severely from malaria than adults, and points out that in highly endemic localities the death-rate among infants and children under five or six years is very high, while those who on superficial examination appear to be healthy have become tolerant after repeated attacks. In Macedonia the symptoms of malignant malaria in children are often atypical, and mainly consist of gastro-intestinal disturbance. The temperature ranges between 102° and 103° F., with very short periods of remission and intermission, so that the chart may show an almost continuous fever. Death may result from acute primary cachexia, but many survive with chronic splenomegaly. It is interesting to note that among the civilians who contracted malaria in England between 1917 and 1919, no fewer than 75 per cent. were children. In the great majority the manifestations were quite typical, but more severe than in most of the indigenous cases in adults. Reference is made to Lieut.-Col. Wilkinson's observation that in England, as in the tropics, the examination of school-children is one of the most valuable means of ascertaining the existence and prevalence of malaria in a locality. Thus in October, 1917, thirty-eight children of the Queenborough Urban and Sheppey Rural Districts were examined, and four, or 10·5 per cent., showed benign tertian parasites in the blood. An instructive list on p. 176 of some provisional diagnoses made in England and other non-malarious centres in regard to cases subsequently proved to be malarial shows that malaria may frequently be mistaken for other conditions commonly met with in children, such as anæmia, debility, convulsions, epilepsy, jaundice, rheumatic fever, valvular disease of the heart, and worms. The book is well printed and illustrated, and most readers will endorse Sir Patrick Manson's foreword that it is "a fine performance, which is bound to do an immense amount of good." J. D. R.

DEFECTIVE HOUSING AND THE GROWTH OF CHILDREN. By J. LAWSON DICK, M.D., F.R.C.S., Administrative Deputy Commissioner of Medical Services, Ministry of Pension, County of London. London: George Allen & Unwin, Ltd., 1919. Price 3s. 6d. net.

THE present inquiry was suggested to the author by a research into speech defects amongst school-children. He found amongst these delayed physical and mental development. Rickets proved to be the prevailing defect from which these children suffered, and for this defective housing was largely responsible. After discussing the stigmata of this disease and dwelling especially at the teeth in rickets, the author goes on to consider the mental development in rickets, and states that the mental condition improves as the child grows older. He suggests that rickets in the growing child may be regarded as a phase of hypothyroidism. Defective housing and overcrowding are the essential factors in the production of rickets. Such conditions will inevitably produce rickets whether the food be good or bad. Deficient feeding is only a contributory and aggravating factor. This book is really a plea for better housing of the working classes—a problem which the latter have themselves rendered extremely difficult to solve in these days. If the author has added but little to our knowledge he has at least drawn attention to some very important matters, and what he has written deserves to be carefully studied. J. B.

HOME EXERCISES FOR SPINAL CURVATURES. By RICHARD TIMBERG, M.R.C.S.Eng., L.R.C.P.Lond., G.D.Stockholm, Medical Officer, Physico-Therapeutic Dept., St. Thomas's Hospital, etc. Second edition. London: William Heineman (Medical Books), Ltd. Pp. 67. Price 6s. net.

THE subject of physical therapeutics has of late years attracted considerable attention and we therefore welcome the publication of the second edition of this practical little book. The author has set forth concisely and convincingly the case for home exercises in the treatment of spinal curvatures and allied deformities. After some brief remarks on the normal condition of the spine he discusses how spinal curvatures arise, and then considers the object of the exercises and what may be expected of them. A chapter is devoted to a full description of the various exercises, the text matter being elucidated by a series of excellent photographs. The author has in this edition added a chapter dealing with certain deformities of the feet that are often co-existing with spinal curvatures, and in an appendix he gives some directions for use of home exercises. This small book, which should undoubtedly serve a useful purpose, comes from the pen of one who has made a careful study of the subject. It contains information of the greatest practical value, and cannot fail to appeal to all interested in the physical development and well-being of the child. J. A.

CHORIO-EPITHELIOMA MALIGNUM. KLINISKE OG PATHOLOGISK ANATOMISKE STUDIER. MED-BIDRAG TIL BELYSNING AV CLÆREMOLÆNS OVERGANG TIL CHORIO-EPITHELIOM. Summary in English. By ANTON SUNDE. Pp. 280. Kristiania: Emil Mostue, 1920.

IN this monograph, which forms a supplement to the May number of the 'Norsk Magazin for Lægevidenskaben,' the writer discusses first the chances of the cure of chorio-epithelioma malignum by operation, and secondly the frequency with which hydatid mole is transformed into chorio-epithelioma malignum. The work is based on the study of 38 cases examined by the writer. Of these, 20 were inoperable on admission to hospital, and of the remaining 18, 12, or 66 per cent., were cured by operation, the patients having been kept under observation for an average period of eight years after the operation. These results show that the chances of recovery are good provided that the operation can be performed during the early stage of the disease—that is to say, during the first three weeks. Of 122 cases of hydatid mole who were kept under observation by the writer for periods varying from five to forty years, the average time being twelve and a-half years, only 6, or 5 per cent., subsequently developed chorio-epithelioma malignum.

The Norwegian text is accompanied by numerous tables and photographs of the naked-eye and microscopical specimens, so that with the aid of the English summary much valuable information can be obtained by those not familiar with Scandinavian. J. D. R.

TRANSACTIONS AND SEVENTH ANNUAL REPORT OF THE LONDON DERMATOLOGICAL SOCIETY. London: John Bale, Sons & Danielsson, Ltd. Price 2s. 6d.

THIS Society centres round the St. John's Hospital for Diseases of the Skin, and the 'Transactions' show what a wealth of excellent material is attracted to that institution. Members of the Society had the opportunity of exhibiting examples of many rare and interesting conditions. In addition several papers were read, and are herein included, the best of these being one on ulcers of the leg, by Dr. Prosser White, of Wigan, which is a real contribution to our knowledge of this distressing subject. The opening address was pronounced by Dr. Leonard Williams, who spoke of the thyroid gland, and condemned stiff collars. The President of the Society in his address referred with pride to the fact that the X-ray treatment of ringworm had been practised at this hospital since its first introduction, and on the last page of the volume before us exhibited to the members a series of cases of X-ray dermatitis of the scalp following treatment for ringworm. *Verb sap.*

H. D.

TRAITEMENT DES ARRÊTS DE CROISSANCE PAR LE DR. MAURICE SPRINGER, Ancien interne des hôpitaux de Paris à l'hospice des Enfants assistés. Paris: Baillière et fils, 1920. Price 3 fr.

THIS little book strikes a somewhat fresh note in infantile therapeutics. Treatment is discussed by means of opotherapy, and due note is taken of the influence of the thyroid and the thymus glands on growth. The importance of digestion and alimentation is emphasised, and the *régime* to be followed during early development is clearly indicated. Rules of alimentary hygiene are fully and explicitly set forth, and the importance of muscular exercise during early life is insisted on. Sections on hydrotherapy, climatic measures of treatment, electricity and drugs complete a volume replete with numerous useful facts. As regards drugs, the author has often observed good results follow the use of alkalis combined in the form of isotonic solutions if administered over a prolonged period. We most cordially recommend this little book as a guide to the treatment of backward children. Its pages contain many novel and useful suggestions. J. B.

KINDER-TUBERKULOSE: IHRE ERKENNUNG UND BEHANDLUNG. By H. MUCH. Small octavo, pp. 36, with two plates. Leipzig: Curt Kabitsch, 1920. Price 4m. 80pf.

THIS brochure on tuberculosis in children is written "aus der Praxis für die Praxis"—much more so than is usually the case with such a profession. It is like the conversationally dogmatic discussion that takes place at a meeting of specialist clinicians. Signs, symptoms, remedies, are not put in their text-book order, but given as the author himself rates them, and we are far from quarrelling with all such exclusion of the superfluous and the obvious. In hilus tuberculosis Much believes strongly in d'Espine's sign—"the best means of diagnosis next to the Röntgen plate." He gives several fallacies as seriously detracting from the value of a negative v. Pirquet. Of course most interest attaches to his claims for "granules" and for partigens. It will be remembered (incidentally it might very excusably *not* be remembered, because recently a prominent English pathologist wrote a big book on tuberculosis without mentioning either), that aberrant forms of tubercle bacilli, now called Much's granules, have been described by this worker, and that he is also responsible for tuberculins prepared from constituents of the bacillus of Koch; the fatty envelope, the albuminous content, and so on. He says that others have found granules in the lesions of erythema induratum and in phlyctenules, and recommends partigen treatment, although scarcely so strongly as the X-ray. Of course the size of the book precludes his dealing with bone and joint disease or scrofula. But on lung affections it is valuable and distinctly interesting, the more so from its conciseness. Much has written verses in his time, of what quality we know not; the fact of his literary practice tells however to advantage here, in that his "stuff" is easy reading. Too many medical works deserve Dr. Johnson's censure on Floyer—"His book for want of order is obscure." W. C. R.

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Original Articles.

PÆDIATRO-MATHEMATICS; OR THE APPLICATION OF THE PRINCIPLES OF MATHEMATICS (AND PHYSICAL CHEMISTRY) TO THE STUDY OF CHILD PHYSIOLOGY AND PATHOLOGY.

By W. M. FELDMAN, M.D.Lond.,

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CHEMISTRY, like every other branch of natural philosophy, did not become an exact science until it became quantitative, and until such time as the results obtained by the physiologist are capable of being subjected to the same mathematical processes as are those of astronomy, physics and chemistry, physiology will be looked upon as a kind of Cinderella by the priests who worship at the shrines of those sciences which are universally acknowledged as exact.

Probably the first to occupy himself with quantitative measurements in physiology was the Rev. Stephen Hales, who nearly 200 years ago inserted a vertical glass tube into an artery of a horse, and measured the arterial blood-pressure of the animal by the height to which the column of blood rose in the tube. Hales realised that "the most likely way to get any insight into the nature of those parts of the creation which come within our observation must in all reason be to number, weigh and measure."

Since Hales' time a number of pioneers have from time to time applied their mathematical genius to the investigation of various problems in connection with the human body. Foremost amongst these are the brothers Weber and Helmholtz in Germany and the Rev. S. Haughton in England. Haughton's book on 'Animal Mechanism' has, I regret to say, not been given by physiologists the same amount of attention as have the works of the German physiologico-mathematicians.

During the last few years, however, a great tendency for quantitative measurement has manifested itself in the investigation of most physiological problems. This is a very healthy sign, showing, as it does, that the time is fast approaching when the fairy slipper of mathematics will be fitted to the dainty foot of Cinderella and physiology will be declared a princess amongst the exact sciences.

At the same time it must be realised that there are many difficulties in the way of making physiology as exact a science as physics or chemistry. For the animal body is not a test-tube, and whilst in a chemical experiment one can always expect the same qualitative and quantitative results to happen when the same reagents are brought into combination in the same quantities, similar prophecies cannot always be made in experiments conducted on animal bodies. Still, much progress has been made, and much greater progress will, I have every confidence, be made in the near future. In this article I propose to touch upon a few of the quantitative researches that have been carried out in the human infant and the results that have so far been reached.

It will be impossible to go into detail about the various matters in this place. Those who wish to go deeper into the subject will find detailed information in my recently published book on 'Ante-natal and Post-natal Child Physiology.' The numbers in parentheses in the present article refer to the pages and chapters of the book.

(A) Researches on Infant Mensuration.

(*a*) *Determination of the surface area of the body.*—Quetelet, some eighty-five years ago, was the first to study the weights and heights of individuals from a mathematico-statistical standpoint. Since then the subject has been intensively investigated by many people, foremost amongst whom are Francis Galton and Karl Pearson with his collaborators and pupils. The results that they achieved have been of enormous medico-sociological value, but their physiological bearing has been almost insignificant. But about forty years ago Meeh was the first to show that a comparatively simple relationship exists between the weight of an individual and the extent of the superficial area of the same individual. He found that this relationship may be expressed by the following formula :

$$S = K\sqrt[3]{W^2}$$

Where S = surface in square decimetres,
W = weight in kilograms,
and K = a constant, which = 12·3 in adults and which Lissauer found to be = 10·3 in infants.

Since then several other more exact formulæ have been suggested, the most recent of which is that of D. and E. F. Dubois, viz. :

$$S = 0{\cdot}7184,\ W^{0{\cdot}425}.\ H^{0{\cdot}725},$$

where S and W are the same as in Meeh's formula and H = height in centimetres.

These relationships between weight and surface or between weight, height and surface are of enormous physiological importance, inasmuch as it has been shown by Rubner (and so far not yet disproved) that *the amount of heat produced by an individual is proportional to the superficial area of his skin.* And as the amount of food required by a person necessarily varies with his or her energy expenditure, it is clear that an exact evaluation of the cutaneous area of an individual becomes of great importance not only physiologically, but from the point of view of practical dietetics. Now it is obviously a very complicated matter to measure the surface area of a human body, but it is very easy to measure a person's height and weight, and hence formulæ which enable one to calculate surface from weight, or from weight and height, at once become of very great physiological value.

To show the actual application of such a formula to a human infant we shall take the following example :

A fairly quiet infant weighing 5 *kgrm.* (11 *lb.*) *is fed on cow's milk. How much milk does it require per day?*

It has been found from metabolism experiments that the daily maintenance ration of an average infant is 1500 calories per square metre, and the growth quotient (*i. e.* the extra number of calories required for growth) is about 13 per cent. of the maintenance ration, viz. another 200 calories. Hence the total number of calories required = 1700 calories per square metre. Now cow's milk has an average calorific value of 736 calories per litre. Therefore to supply 1700 calories, $\frac{1700}{736} = 2{\cdot}3$ litres of milk are required. In other words 2·3 litres of milk are required per square metre of infant per day.

Now from the formula $S = 10{\cdot}3\sqrt[3]{w^2}$ we get—

$$\begin{aligned} S &= 10{\cdot}3\sqrt[3]{25}, \\ &= 30 \text{ sq. decimetres}, \\ &= 0{\cdot}3 \text{ sq. metres}. \end{aligned}$$

Hence the daily amount of milk required = 0·3 × 2·3 = 0·7 litres = 700 c.c.

= 25 oz. (approximately).

This method, though very simple, still requires tedious calculations, inasmuch as it necessitates the extraction of a cube root. D. and E. F. Dubois have published curves which give at a glance the surface of any individual from a knowledge of their heights and weights.

(*b*) *Determination of intestinal area.*—Very recently a much simpler system of feeding has been established by von Pirquet. His method merely requires a knowledge of the individual's sitting height (*i. e.* the length of his trunk), and the calculation is such as can be done in a few seconds by anybody who can do simple multiplication. The method is ingenious and quite easy to follow. It depends on the fact that energy expenditure is not only a function of the *superficial* area, but is also proportional to the *intestinal* area of the individual. But "what," one may well ask, "has that to do with sitting height^2?" Well, this: it can be shown that there is a simple relation between the area of a person's intestine and his sitting height. This relation is as follows:

Area of intestine in sq. cm. = (sitting height^2). (For the method of deriving this formula see *op. cit.*, pp. 477–479.) Now von Pirquet finds that for a child under six months old the number of grammes of standard milk daily required by it is $0{\cdot}5\ (Si)^2$, where Si = sitting height in centimetres.

Thus supposing an infant has a sitting height of 35 cm., then it requires $0{\cdot}5 \times 35^2 = 613$ grm. of milk a day.

It is true that there is a good deal of empiricism in this method but there is this to be said for it—that during the war and since then, when economy in feeding became such an urgent necessity in central Europe, this method was introduced in various hospitals and institutions in Austria with extremely satisfactory results.

(*c*) The next measurement we shall take up is the *determination of the volume of the body.*

Supposing we are given a football and we are asked to determine its volume, we may understand by that one of two things, viz. (*a*) the *gross* volume, *i. e.* the volume occupied by the fully inflated ball. This would give the volume of the material of which the ball is composed together with that of the air contained inside the ball.

Or (β) the *net* volume, *i. e.* the volume of the material alone as determined by deflating and folding the ball up. In the same way, when we speak of the volume of the human body we mean either its gross volume, by which is understood the volume of the body as a whole, including the gases contained in the respiratory and gastro-intestinal tracts, or the net volume, which signifies the volume of the tissues of the body alone exclusive of those gases.

The gross volume of the body can be easily determined hydrostatically by weighing it in and out of water, when gross volume in cubic centimetres = weight in air − weight in water in grammes. Such a determination, however, depending as it does upon the degree of pulmonary and intestinal distension at the time of the experiment, is of no great physiological value. But if one could obtain the net volume of the body, then a certain amount of information would be obtained regarding the composition of the body. This has recently been accomplished by Pfaundler by means of a special apparatus called a volumino-meter, which can be used for adults as well as infants, whether dead or alive (see pp. 384 and 385). Pfaundler found that rickety infants have a higher net volume (or lower net specific gravity) than normal infants, on account of the demineralisation of bone as well as the increased amount of water in the tissues in rickets. On the other hand, in cases of infantile atrophy the net volume is lower (or net specific gravity is higher) on account of the loss of fat, whose specific gravity is less than 1.

It is also clear that a knowledge of the gross and net volumes of the body enables us, by simple subtraction, to ascertain the amount of gas contained in the respiratory and digestive tracts. Thus, suppose the gross volume of a given infant = 2365 c.c. and its net volume = 2060 c.c., then the amount of gas in the infant = 2365 − 2060 = 305 c.c.

(B) THE LAW OF MINIMAL SURFACE AREA.

The phenomenon of surface tension is one with which students of elementary physics are familiar. A brief discussion of the cause of that phenomenon soon leads to the *law of minimal surface area*, which states that *there is a tendency in every liquid to diminish the area of its surface as much as possible.* Now it can be shown both experimentally and mathematically that the segmentation of the fertilised ovum takes place in accordance with the law of minimal surface area. This may not for the present be of any practical importance, but its academic interest is stupendous.

It is a step forward in the direction of the realisation of His's dictum that "The ultimate aim of embryology is the mathematical derivation of the adult from the distribution of growth in the germ" (see Chapter VII).

(c) GULDBERG AND WAAGE'S LAW OF MASS ACTION.

The law which regulates the velocity of a chemical reaction between two interacting substances is known as Guldberg and Waage's law of mass action. It states that the velocity of a chemical reaction between two interacting substances is at every moment proportional to the molecular concentration of each of these substances. From this law it is easy to find mathematically at which stage of a reaction the rate of transformation is a maximum. Supposing the degree of concentration of one of the reacting substances at the beginning of a reaction to be A molecules per litre and the amount transformed during a certain period to be X molecules, then it can be proved that when $X = \frac{A}{2}$ the velocity of transformation becomes a maximum. This fact has been utilised to study the rate of pre-natal as well as post-nasal growth.

From certain considerations, into which it will be impossible to enter here, it can be shown that growth is a chemical reaction in which the law of mass action holds good. Hence we ought to find that the rate of growth in weight of any animal should be greatest when the weight attained is half the weight the animal reaches when it stops growing. This has been found by Robertson to be the case.

Robertson claims that it is possible to calculate mathematically the weight of a fœtus or of an infant of any age.

This is the briefest outline of a very interesting application of mathematical chemistry to the study of an important phenomenon of childhood. Those who wish to go fully into the subject will find a detailed discussion of the various growth equations with references to literature in Chapter XVIII of my book. Here I wish to mention a very interesting application of these growth equations. It is this: Various data of the neo-natal loss of weight of infants would seem to show that boys lose more during the first few days of post-natal life than girls. This, however, is not the case. By means of these equations it can be shown that the difference in the amount of loss is only apparent, but that in reality the loss as represented by a percentage of the original weight at birth is identical in the two sexes (see p. 279).

(D) The Application of Optical Methods.

(*a*) There would at first sight appear to be a far cry between the velocity of light in various fluid media of the body and the metabolism of the body, and yet there is a very close connection between the two. The refractive index of a substance, of course, depends upon the velocity of light through that substance, and it has been found that the refractive index of the blood, like that of any other fluid, varies with the degree of its concentration. The richer the blood is in water the lower is its refractive index and *vice versâ*. Hence by determining the refractive index of the blood of the same individaul under different environmental conditions a very good knowledge is obtainable of his water metabolism. In the case of infants this method has been utilised to study the cause of the loss of weight during the first few days of life. Rott has shown that the hæmo-refractometric curve of a newborn infant is a true mirror image of the weight curve (*v.* p. 423). During the first few days, when the weight falls, the refractive index of the blood rises; when the weight falls to the minimum the refractive index rises to its maximum; as the weight begins to rise the refractive index begins to fall. The curves, therefore, prove that the loss of weight at birth is, at any rate, partly due to loss of water.

(*b*) The quantitative estimation of the various blood-pigments or their derivatives by means of the *spectrophotometer* has been utilised not only for the estimation of the percentage of hæmoglobin in infants' blood intravascularly by placing the infant's little finger in front of the slit of a spectroscope, but also for the study of the circulation and distribution of bile-pigments in the blood of the umbilical cord, in the maternal blood, and in the infant's urine, meconium and fæces, in cases of icterus neonatorum. As the result of a very elaborate spectrophotometric investigation, Ylppö concludes that icterus neonatorum is of hepatogenous origin (see *op. cit.*, pp. 304–309).

(*c*) The spectrophotometer may also be utilised for the purpose of investigating the quantitative distribution of reduced and oxyhæmoglobin in fœtuses. Such an examination would decide the debated question of the course of the two streams of blood (superior and inferior caval) in the fœtal circulation. As far as I know no such investigations have yet taken place.

(E) THE APPLICATION OF ELECTRICAL METHODS.

(*a*) The determination of the electrical conductivity of various fluids in the body is often done for various purposes. In the case of urine, for instance, the electrical conductivity of that fluid gives the number of free ions in it, and consequently the degree of its salt concentration. In the case of infants, for instance, in whom there is physiologically a great retention of salt in the body, we would expect to find a diminished electrical conductivity of the urine.

The depression of freezing-point and the viscosity of a fluid afford similar information.

(*b*) The importance of a determination of the H-ion concentration of the blood from the point of view of acidosis is familiar to everybody. In the case of newborn infants it has been shown that the H-ion concentration (C_H) is greater than in adults, and in premature infants it is greater than in mature ones.

This explains the greater susceptibility of premature infants to septic diseases, inasmuch as it has been shown that the degree of the blood's resistance to microbic invasion varies inversely with its C_H.

(F) THE PRINCIPLES OF MECHANICS.

The study of the structure and configuration of the infantile skeleton on physico-mathematical lines is another theme bearing on the subject of this paper. This, however, is a matter which is too involved to be considered in this place, and the reader is consequently referred to Chapter XXIV of my Child Physiology, for a full illustrated account, where the practical importance of this seemingly academic question is discussed.

Another subject in which elementary mechanical principles play an important *rôle*, but which on account of its length cannot be discussed in this place, is that dealing with the mechanics of the child's body (Chapter XXVI), whilst the importance of careful measurements of the body from the point of view of the study of growth on scientific lines (Chapter XVIII) is another example of the beneficent influence that the introduction of chemico-mathematical principles has had upon the elucidation of an important phenomenon of prenatal and postnatal child life.

STIGMATA OF PREDISPOSITION TO BONE AND JOINT TUBERCLE.

By W. C. Rivers, M.R.C.S., D.P.H.,

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(*Continued from p.* 148.)

Nasal Defect.

The connection of non-tuberculous nasal defect with tuberculosis is a subject with a literature which, strongly inter-corroborative as it is, remains almost unknown even to specialists. We get a hint of its conclusiveness and strength first from Alexander (2). Those who would care to examine it up to date are referred to my book already mentioned, for it is far too long to enter upon here.

We have already noted, in last number, that the two great nasal affections coupled with surgical tubercle are ozæna and catarrhal rhinitis.

As to *ozæna,* early opinion was that, as Trousseau (3) put it, "L'ozène est parfois une des manifestations de la scrofule," since it "s'observe en même temps que le gonflement de la lèvre supérieure, en même temps que des ophthalmies dites scrofuleuses." That position was soon forsaken. In 1884 Morell Mackenzie (4) wrote that scrofula probably produced a certain disposition to catarrh, but could not be said to produce ozæna. And the majority now takes the view that atrophic rhinitis is the cause of the tuberculosis found along with it; Alexander's masterly investigation removes doubt. That such tuberculosis may affect bones and joints may be seen from the records of those investigating nasal diseases post mortem. Thus of E. Fraenkel's (5) four cases of ozæna, one, a woman, aged 57 years, died of caries of the sacrum; while one of Krause's (6) two ozæna subjects had a complication of diseases including spinal caries.

Catarrhal rhinitis of the scrofulous seems to be a condition so familiar as to escape much description—at all events in rhinological text-books. Moritz Schmidt's well-known work, for instance, has no word about it. However, from the time of Volkmann to the present day the fact is well established that tubercle bacilli are not apparently concerned in its causation. This "scrofulous rhinitis" is a catarrhal one, dependent upon simple micro-organisms other than tubercle. Writers on surgical tuberculosis have deemed it analogous to the other septic infections so common in that affection—

in a word, have considered it a manifestation of the pyogenic scrofulosis aforementioned—and the rhinologists have certainly not contradicted them. Moure, however, the Bordeaux laryngologist, who has also from his great knowledge of rhinology and of special literature helped much in the elucidation of the subject, has tried from the rhinological side to make of it and of other rhino-pathological states a separate nasal affection—" coryza pseudo-atrophique strumeux "—non-tuberculous, hereditary, and peculiar to strumous subjects.

He described similarly a " coryza pseudo-atrophique tuberculeux " in consumptives. This conception I have perhaps adduced fresh grounds for negativing, in a source already too often cited.

We pass on to our investigation, then, bearing in mind, although not confined to, these three points: *ozæna, catarrhal rhinitis*, and their attempted combination, " coryza pseudo-atrophique strumeux."

In our present clinical material the full picture of *ozæna*—an atrophic condition in each nasal fossa, thick crusting, fœtor—was seen in no instance in the 404 tuberculous, although twice in the 573 controls; it is possible, however, that one of the latter was congenital syphilis, not *rhinitis atrophicans fœtidæ*. Amongst the tuberculous were two cases only lacking fœtor to be typical ozæna. One had the characteristic broad chamæprosopic face, with the round, vertically tilted nostrils and the flat nose. There was some *eczema introitis narium*. On anterior rhinoscopy the posterior wall of the pharynx was well seen on either side. There was a history of always getting crust from the nose; and the mother said that all the other children were like it, and she herself when young (typical ozæna not seldom is hereditary). In the other, purulent rhinitis seemed to have been caught in actual transition into ozæna (compare Bosworth's hypothesis of the origin of ozæna from juvenile purulent rhinitis). Considerable endo-nasal atrophy was already present, with crusting and muco-purulent secretion all over both nasal fossæ. A younger brother, also with tuberculous dactylitis, had adenoids (compare Pluder's (7) statement that he had often found in families with hereditary tuberculosis part of the children with adenoids and part with ozæna). With the advent of puberty and simultaneous enlargement of the upper part of the respiratory tract the nose of this first child will get drier, less easily " blown," and in all probability fœtid.

Endo-nasal atrophy short of ozæna, what may be called a simple atrophic rhinitis as opposed to a fœtid one, was commoner in the tuberculous, occurring 16 times in 404 subjects (3·9 per cent.) as against 17 times in the 573 controls (2·9 per cent.). In both series it was seen more than twice as frequently in the females as in the males.

Nasal obstruction occurred in 23 per cent. of the tuberculous and in 6·2 per cent of the others. Here the sex-incidence just mentioned was reversed: nasal obstruction was seen, in both tuberculous and non-tuberculous, rather more often amongst the males. The reason of this phenomenon (which Rivers, *loc. cit.*, observed in a more marked form in consumptive and non-tuberculous adults) is probably the varying nasal conformation of the two sexes, males inclining to leptorrhinia, Siebenmann's term for narrowness of the nasal passages, which are then easily obstructed, and females to the infantile platyrrhine type, rather over-broad, in which slight degrees of dryness and of atrophy are soon set up and soon noticed. Compare the known preference of true ozæna for the female sex.

Non-tuberculous abnormalities, neither atrophic nor obstructive, totalled 17 per cent. of the tuberculous, only 4 per cent. of the normals. There was no uneven sex-incidence here.

Altogether the 404 tuberculous subjects had 181 with an abnormal (and non-tuberculous) nasal condition, but the 573 normals only 76—that is, *in bone and joint tubercle non-tuberculous nasal abnormality is more than three times as common as in the general population.*

From a practical standpoint the most striking difference was the preponderance of thin whitish-yellow crusting in the nasal fossæ, especially on the septum; it was seen in 95 of the tuberculous as against 10 of the controls—that is, more than ten times as often. This characteristic appearance was in both series a little commoner in the females, probably for anatomical reasons already adduced. It was four times less frequent in the Barnsley cases than in the others—very largely because this lot of cases contained all the adults in the material, since the Barnsley children showed crusting just about as often as—in fact a trifle oftener than—the Alton or Sheffield ones did. But in 32 adults with bone and joint tubercle crusting was not seen at all.

This finding is one of the points—for the sake of balance and space one cannot enter here into a rhinological dissertation—telling against Moure's conception of nasal abnormality of tuberculous persons as a disease which, although not tuberculous, is *sui generis.* He says, for instance, that the endo-nasal appearances become more marked with the advance of the tubercle. But these adults had on the average suffered with tubercle much longer than the children had. Moure says that in the strumous an initial nasal hypertrophy, with consequent obstruction, may change to atrophy later on. But that occurs in the non-tuberculous too; the end stage of hyperplasia of the nasal mucosa is naturally atrophy, and the local pressure and surface tension set up by crusted secretion also tend to produce atrophy. Moreover the cases with severest nasal atrophy were certainly not those with the most advanced tuberculosis. However, the testimony of a noted laryngologist is valuable as establishing the prevalence of this complication (to call it only that) of surgical tubercle. But the most reasonable view to take is to suppose, with Cornet, a sensitiveness to pyogenic organisms on the part of the nasal mucosa comparable to that undoubtedly existing in scrofula in other parts of the body, and an accentuation of the tendency to dryness of the integuments common in children, especially those in any kind of ill-health. All this is aggravated in the subjects of past adenoids, from the hypertrophic rhinitis accompanying them passing on into dryness and atrophy.

In sum, you get impairment of nasal respiration—either qualitative, from drying up of the normal Schneiderian secretion, or quantitative, from blocking of the nose by hypertrophy, by adenoids, by crusts. With the first respiratory barrier to infection thus weakened, external noxæ find it easier to penetrate the system, by the respiratory portal, by the lympho-hæmic, or by the alimentary.

The three points forming the main subject-matter of this Chapter II have now been discussed, and it remains only to gather up the ends with a few further observations. In nearly every investigation, especially if it is worth anything, there is an element of what Horace Walpole called *serendipity*—that is, in looking for one thing one is likely to come upon another. It had been suspected that there might be an association of mental unsoundness with bone and joint tubercle, just as there undoubtedly is with consumption; for it is well recognised that lunatics and idiots, even in modern hygienic institutions healthier to live in than the usual home, yet die of phthisis far in excess of ordinary rates.* And this association presented itself quite prominently. One of the thirty-two adult Barnsley cases, a young woman with tuberculosis of the knee which had almost healed, was obviously faulty mentally. Her appearance and behaviour were unusual, she relied on others to answer questions for her, could not read or write, and easily got excited, when her voice became hoarse and peculiar. One of the Alton cases was a hopeless idiot unable to speak, which was being sent out as requiring more supervision than a hospital could be expected to give. However, on this point it is an advantage to be able to quote expert opinion quite unbiassed by any preconception.

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* Those who would explain such excess by extra opportunities of infection are clearly ignorant how great it is. In 1901 there were about 60,000 deaths from tuberculosis in England and Wales to a population of 32½ millions, or under ·2 per cent. But in that year the tuberculosis death-rate in borough and county asylums was 15·8 per cent. of the inmates!

The head teacher at Alton said that out of the other 258 children seen—that is, not counting the idiot—three or four were definitely "M.D." (mentally defective), that some further children were very backward, but did make progress on being persevered with, and that some were very clever. This agrees well enough with what is known, for if mental deficiency is correlated with tuberculosis, so is a certain intellectual brilliance. The report of the Sheffield teachers was that 2 out of the 92 were mentally defective. Leaving the idiot out of count, this makes 5 or 6 mental defectives out of 350, or a percentage of at least 1·4.

How does this compare with the general average?

A head mistress of the juvenile department of a large Yorkshire school, who thus saw the children on entry at the age of five, when none had had education, and a very striking mental defect would be needed to prevent a child attending, considered 2 mentally defective out of 273, or a percentage of 0·7. Another head mistress, taking the results for three years past, gave 0·4 per cent.; a head master of a school of 340 children, including infants, gave 0·5. In the London County Council school medical officer's report for 1918 the proportion of mentally defective is—at 8–9 years 0·13 per cent., and at 13 years 0·015 per cent.

Since severe idiocy is excluded from the control series as well as from the tuberculous one, a comparison may fairly be drawn. It indicates that *at the very least mental defect is twice as common in surgical tubercle patients as in the ordinary run of children—probably three or four times as common*—and if idiots and imbeciles, who get very early into mental institutions, were taken into consideration, the disproportion would be considerably greater.

As against the view that the mental defect was a product of tuberculo-toxæmia, there is, first, its occurrence in the control series—that is, in non-tuberculous children; while secondly, in both normals and tuberculous it was often associated, so teachers from either side assured me, with a certain artistic aptitude.* The Alton teachers found some of these children apt at the modelling and fancy work; one of them could design patterns—a rare capacity. The head master just quoted instanced a boy of thirteen, unable to write his name, who was useful in executing blackboard illustrations. Now if the mental defect was tuberculo-toxic, so also would the artistic ability be. Tuberculo-toxæmia, in truth, is, as an ætiological factor, inhumanely overworked. The better hypothesis is that both mental defect and artistic capacity have strong degenerative, atavistic affinities.

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* A phenomenon frequently mentioned in text-books on mentally defective children. Compare the same facility in low-grade savages and in prehistoric man, as mentioned by many writers—for instance, Galton, 'Inquiries into Human Faculty,' 2nd ed. (London: Dent & Co.), p. 72.

Hypertrichosis.

"Idiots," says Darwin (8), quoting several authorities (Pinel, Maudsley, etc.), "often show pronounced hairiness"; he gives this as a "theroid," brute-like, or atavistic trait. We read again (*ibid.*, pp. 19, 20): "Many delicate children, as I have been assured by a surgeon to a hospital for children, have their backs covered by rather long silky hairs; and such cases probably come under the same head."

The last clause refers to this hairiness being a persistence of the fœtal lanugo, which Darwin pronounces to be the rudiment of the uniform hairy coat of animals. It is well known as a characteristic of surgically tuberculous children, although, so strong is the present bacteriological craze, it is referred to in conversation much more often than in the text-books. Accordingly it seemed worth while to institute a comparison, which resulted thus. In the Alton cases, which were observed particularly in this respect, fine downy hair on the body or limbs occurred in 3 out of 130 boys (2·3 per cent.), and in 3 out of 116 girls. In a control of 181 normal school-boys it was seen only once (0·5 per cent.), and then in a degree far less than in any of the tuberculous cases. It was always quite another thing from the long, sparse, coarse hair growing over an inflamed joint (which, indeed, Darwin was also aware of), and occurred at times only on the limbs in spinal disease, and only on the trunk in morbus coxæ.

Squint.

Squint did not (as I had expected) occur over-frequently in the tuberculous children—indeed, probably with under-frequency: there were only two squints and three heterophorias in all the Alton and Sheffield children. Two in 350 is 0·5 per cent., whereas the normal occurrence is about 2 per cent. This is a negative result of some interest, for in consumptives I found (*loc. cit.*) squint about thrice as frequently as in the non-tuberculous. It may indicate, if these figures are confirmed, that squint is a sign of predisposition to adult pulmonary, but not to juvenile osseous, tubercle, and thus (at a long shot!) be associated with some abnormality of the respiratory system. And here let me answer two criticisms (Review in New York 'Archives of Ophthalmology,' 1918, xlviii, p. 215, and Dr. B. Richardson in some friendly and valuable remarks in this Journal, 1918, xv, p. 201), on my results with consumptives. My figures were—consumptives, 1·2 per cent. squinters; comparable control, 0·4 per cent. squinters. The American quoted Hansen's finding of 2·5 per cent. of non-tuberculous children with squint, Dr. Richardson her own school medical inspection figures of 1·2 to 1·7. Both, therefore, doubted 1·2 per cent. in consumptives representing an excess. But perhaps neither considered the question of age. My consumptives were mainly adults, with fewer adolescents and no children; and so therefore were my controls likewise, in which controls only 0·4 per cent. were found with squint. Now results have lately been published which corroborate this last figure. Dr. Comrie ('Lancet,' 1919, ii, p. 957), in 10,000 recruits, regarded by him (and by the writer of an editorial in the number containing his contribution) as representing a fair sample of the male population, found the squinting percentage to be 0·3. This is practically identical with my finding, which, relating to both sexes, might be expected, since squint is considered a little commoner in females, to be rather larger than one obtained from men only. It would seem, indeed, that the proportion of adults who squint is greatly less than that of squinting children. And since hardly any in the working class get their eyes cured, we may (again postulating a necessary confirmation of our premises) speculate that squinting children have a rather high mortality. It is to be remembered, too, that as squint is over-frequent in lunatics, a few will pass from the general community into asylums.

It is now high time to come, in both senses, to

CONCLUSIONS.

(1) Denial or neglect of intrinsic predisposition to bone and joint tubercle betokens not only want of clinical insight, but the need to read up the subject.

(2) It looks as though a good part of such predisposition were not due to a single undefined susceptibility, but was multiform, made up of several separate abnormalities acting probably by mechanical facilitation of infection, or else associated with other undiscovered abnormalities so acting.

(3) For the facts and findings adduced concerning pigmentation, ichthyosis, nasal defect and mental unsoundness are certainly best explained by regarding them in the light of intrinsic contributory causes.

(4) There are obviously several practical bearings—diagnostic, prophylactic and other. For instance, until that desirable day when, in fairly temperate climates, all schools are open-air schools, children affected as just mentioned should be educated at the open-air school and brought up to open-air employment; while the noting of these stigmata of tuberculous predisposition should form part of the routine work of school medical inspection. The only special training needed would be in rhinology—desirable, too, on other grounds.

(5) Lastly, the eugenic aspect must not be missed. These stigmata have undeniably a degenerate, atavistic quality, and the crude eugenic activity of the bacillus of Koch should be humanely replaced. No tuberculous ichthyotic (unless of great intellectual parts), no tuberculous mental defective should be allowed to reproduce. Tuberculosis clinicians who think only of therapeutics and prophylaxis commit the error of which Benjamin Franklin wrote to Fothergill:

"You think you are doing good; not at all. . . . You are interfering with Nature's provision for the destruction of the unfit. It is as if a Prime Minister should exercise himself in pardoning all the criminals in the country."

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(1) 'Races of Britain.'

(2) 'Archiv für Laryngologie,' 1903, xiv, p. 1.

(3) 'Gazette des Hôpitaux,' 1860, xxxiii, p. 97; 'Cliniques médicales de l'Hôtel. Dieu de Paris,' 1865, i, p. 544.

(4) 'A Manual of Diseases of the Throat and Nose,' London, 1884.

(5) 'Virchow's Archiv,' 1896, cxliii, p. 42.

(6) *Ibid.*, 1881, lxxxv, p. 226.

(7) '68 Versammlung deutscher Naturforscher und Aerzte zu Frankfort,' September, 1896 (discussion).

(8) 'Descent of Man,' 2nd ed., Chapter ii, p. 36.

CONGENITAL PULMONARY REGURGITATION (TRANSPOSITION OF THE SPLEEN).

By Edmund Cautley, M.D., F.R.C.P.

Pulmonary regurgitation is of rare occurrence at all ages, and especially so in early life. When it does occur it is usually due to infective endocarditis, sometimes secondary to pulmonary stenosis. A temporary regurgitant murmur is occasionally heard in cases of mitral stenosis, the increased pressure in the pulmonary circulation causing distension of the pulmonary artery. The case here recorded is apparently of congenital origin, and due to an abnormally large pulmonary artery and orifice.

Marjorie E—, born on April the 11th, 1920, was admitted into the Belgrave Hospital for Children on June the 25th for cyanosis and dyspnœa, and died two days later. She was a firstborn child, breast fed and well nourished, weighing 8 lb. 13 oz. The family history was unimportant.

According to the mother the child had been short of breath since birth and had occasionally gone blue, especially after crying. For two days she had been more blue and had abdominal distension. There was no vomiting, and the stools were normal.

Respirations were very frequent. The chest did not expand during inspiration, and the lower ribs were sucked in. No dulness or adventitious respiratory sounds were found.

The apex of the heart was outside the nipple line in the fifth intercostal space, the right border ½ in. to the right of the sternum, and the left border almost reached the anterior axillary line; dulness extended up to the second left intercostal space. The sounds at the apex were short and flapping, and a short diastolic murmur was heard in the second and third intercostal spaces to the left of the sternum.

The abdomen was distended and hard, the edge of the liver 2 in. below the costal margin.

Course.—The child had much difficulty in taking food, panting, and being unable to get her breath. During the afternoon of the 26th she became extremely distressed after a feed, with deeply cyanosed lips and loud, gasping respirations, the abdomen more distended and hard. From this she gradually recovered under inhalations of oxygen. A less severe attack at 10 p.m. was relieved by a glycerine enema. Further attacks occurred during the night, and ended in death at 7 a.m.

For the notes of the case I am indebted to my House-Physician, Miss Cox. Unfortunately I did not see the patient during life.

Post-mortem.—Some clear fluid in pericardial and peritoneal cavities. The left lower lobe of the lung was partially collapsed, perhaps in consequence of the large heart. There was no evidence of any bronchial or pulmonary catarrh. The heart was much larger than normal. Both the right auricle and ventricle were relatively much hypertrophied and somewhat dilated, while the left auricle and ventricle were unduly small in proportion to the size of the child, and still more so in proportion to those of the right side of the heart. The pulmonary artery and orifice were much larger than normal, the orifice admitting a small little finger and measuring in diameter $\frac{7}{16}$ in. as against an aortic orifice of $\frac{4}{16}$ in. No other abnormality was found.

The liver was congested and rather large. The spleen was small and congested, and situated between the right lobe of the liver and the diaphragm, together with many pea-like accessory spleens.

Comments.—I think that there is no doubt that this condition was of congenital origin and the result of the formation of an unduly large pulmonary artery. The tendency to congenital deformity is supported by the transposition of the spleen. Probably the final illness was the result of collapse of a portion of the lower lobe of the left lung. Whether this was due to abdominal distension, the result of indigestion, or the cause of the distension is uncertain. There was no evidence of alimentary disturbance, as shown by the stools, and no vomiting. The temperature was subnormal throughout.

The case is particularly interesting on account of the rarity of congenital pulmonary regurgitation, and because of its association with transposition of the spleen.

Pulmonary regurgitation is difficult of diagnosis, perhaps because it is not suspected. In the case of a girl,[*] aged 15 years, a diastolic murmur was present for six months before death from verrucose endocarditis of the pulmonary valves. In another girl[†] of the same age there was a history of scarlet fever at the age of 9 years, and a cardiac affection recognised at that time. She came under my observation with the physical signs of a simple pulmonary regurgitation. Various other diagnoses were suggested when she was shown at a clinical meeting, viz. mitral stenosis, pulmonary regurgitation and possibly mitral stenosis leading to back-pressure, and aortic regurgitation, but the general opinion was in favour of uncomplicated pulmonary regurgitation.

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[*] 'Reps. Soc. Study Dis. Child.,' 1902, ii, p. 45; and 'Lancet,' 1902, i, p. 223.

[†] 'Proc. Roy. Soc. Med.,' 1915, viii, Child. Sect., p. 65; and BRITISH JOURNAL OF CHILDREN'S DISEASES, 1915, xii, p. 143.

BRIEF CONSIDERATIONS ON SURGICAL TUBERCULOSIS IN INFANTS.

By Charles Greene Cumston, M.D.,

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Geneva, Switzerland.

After thirty years of surgical practice, a fair proportion of which has been among children of all ages and particularly in infants, derived from a connection for a number of years with a hospital for babies and very young subjects, I feel that the following considerations may not be devoid of interest to those engaged in pædiatric work.

Mesenteric adenopathy and tuberculous peritonitis.—Of tuberculosis of the mesenteric lymphnodes in infants I have no notes, nor have I any recollection of a case in consultation practice. However, no less an authority than Marfan has stated that this process may be suspected when the subject presents a large abdomen, chronically distended and tympanitic, but *without* diarrhœa.

I have never met with an instance of tuberculous peritonitis in infants, at least so far as I am aware. If a case has been seen, then it has been a failure on my part to make the diagnosis. According to Weill and Péhu, tuberculosis of the peritoneum in the infant is characterised by an increase in the size of the belly with meteorism and collateral circulation. Pain is absent or moderate and the temperature hardly, if at all, raised.

Subcutaneous abscess.—This process is, according to my experience, a common one in infants presenting evidence of tuberculous impregnation and is due to the ordinary bacteria of suppuration, whose development is highly favoured by the tuberculous soil in which they become inoculated. The subcutaneous abscesses are multiple and disseminated over the body surface, and last for months. On the other hand, one will meet with instances in which they remain limited to the scalp, subungual dermis, the gluteal or malar regions.

Subcutaneous gummata.—These are frequently encountered in tuberculous infants and I agree with Weill and Mouriquand in that this lesion is an excellent sign of tuberculous impregnation. The lesion may be scattered over the body, or localised to the gluteal region or limbs. I have occasionally met with this lesion in infants from six months to one year of age, but it unquestionably becomes frequent after the first year of life.

Tuberculosis of the lymphatics.—Tuberculous adenopathy may be local or generalised. In the former case the cervical region is the commonest situation. I have seen only one or two cases in nurslings, but the process is, in my experience, not uncommon during the second year of life, and not infrequently is the sole apparent evidence of tuberculous infection, although oftentimes the peribronchial lymphnodes will be found involved both on physical examination and by radiography.

The lymphnodes may suppurate or remain in a quiescent state, but when pus develops it does so slowly without acute or subacute phenomenon. These are, of course, exceptions to this rule. Tuberculosis may also attack the axillary, iliac and inguinal lymphnodes in infants, but I fancy these localizations must be rather uncommon. An interesting point has been referred to by some observers—Hutinel and Tixier among others—namely, that enlarged axillary lymphnodes should lead one to suspect the presence of pleuro-pulmonary or mediastinal tuberculous lesions.

Finally, these adenopathies may become general and then we have to deal with micro-polyadenia, the elements of which give to the examining fingers the sensation as if particles of shot had been inserted under the skin. If this morbid process be met with in an otherwise intact cutaneous surface it is an excellent evidence of tuberculous impregnation, although I would hasten to add that it may be encountered in other infections, such as syphilitic cachexia, chronic septicæmia of gastro-intestinal origin, as well as the cachexia following upon acute infective processes, subacute broncho-pneumonia, measles, etc.

Tuberculous infection of the epididymis and testicle.—I have seen several examples of this lesion in infants varying in age from six months to two years. They all gave a positive cuti-reaction and presented in most instances some other tuberculous lesion as well. The process involved only one testicle and in one or two cases there was some hydrocele. L. Rocher has met with three cases, but he maintains that this is a rare localization of tuberculosis in infants and that it is benign, statements that are in accord with what I have been able to observe.

Bone and joint tuberculosis.—Cases of these lesions I have only seen in consultation practice and cannot, therefore, offer any details as to the outcome of the case. I have seen two well-defined instances of Potts' disease, one in the cervical, the other in the mid-dorsal region in infants aged respectively 11 months and 21 months. Several instances of spina ventosa in subjects under two years of age are among my case-histories; also three instances of tuberculous knee-joint, one in an infant of 13 months, the two other subjects being each 21 months old.

Tuberculous rickets.—Under this denomination I am not referring to rickets in tuberculous infants, but to true tuberculous rickets. Of this process I have seen a dozen cases: five were in breast-fed infants, seven in artificially fed infants, but under the supervision of highly competent physicians. None of these subjects had ever presented any notable digestive disturbances. The affection was seen in about equal proportion in the first and second year of life.

These infants are anæmic, pale, and at 16 to 18 months still refuse to walk. The tibia presents an incurvation with the symptom described by Marfan, namely, a supramalleolar thickening of the bone; there is broadening of the epiphyses of the wrist, bending of the ribs, and inframammary narrowing of the thorax, projecting forehead and a largely widened fontanelle.

The belly is often enlarged and flabby, there are adenoids, polyadenia, and splenomegaly, with or without an enlarged liver. The splenic enlargement is especially frequent, and when encountered in infants above the age of one year is most suggestive of tuberculous infection.

I am of the opinion that tuberculous osteo-periostitis frequently coexists with tuberculous rickets, although other evidences of the affection may be wanting.

PRIMARY SARCOMA OF SMALL INTESTINE CAUSING UNUSUAL SYMPTOMS.*

By W. MAXWELL TELLING, M.D., F.R.C.P.,

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THE specimen shown is that of a small polypoid sarcoma, primary in the small bowel, in a boy, aged 3½ years. The clinical history and physical signs were of such interest, and the variety of growth is so unusual, that I think the case is worth putting on record.

The child was sent to me by Dr. Humphrys, of Retford, on May the 3rd, with a history of intermittent attacks of abdominal colic since the previous October—about seven months. At first the attacks of colic had come on about every three or four days, and had lasted from half an hour to an hour. The pain was of some severity, causing the child to cry and to be very restless. The attacks increased in severity and duration till they were occurring daily and lasting for several hours. He was in an attack when I first saw him, and it had then lasted five and a half hours. For about fourteen days preceding this vomiting had usually occurred with the attacks. The child had always had constipation, which had not been unusually worse since the colic had been present, as it was easily controlled by simple aperients. No blood had ever been noted in the stools. The boy was healthy looking and had not lost much in weight. His doctor had noted a sausage-shaped tumour during some of the attacks. This disappeared in the intervals, when he would be perfectly well and cheerful.

On May the 3rd a considerable sausage-shaped tumour was felt to be extending transversely across the hypogastrium from one iliac fossa to the other. Its consistence varied with palpation, and it was obviously a contracting coil of gut. Handling it did not appear to increase his pain or discomfort, which persisted throughout an attack, but was not more than to make him fretful and whimpering. A small nodular mass was felt in the left hypochondriac region and was thought to be fæcal. Its disappearance after an enema appeared to confirm this. It was not noted again.

I at once admitted the boy to hospital, where daily enemata for a few days appeared to make him more comfortable, the duration and severity of the attacks diminishing, but they increased again before long. During this period of nine days before operation the peristaltic tumour was observed in a variety of positions, and under conditions of varying thickness and size. When present there was never the slightest rigidity, the abdomen being palpable with the greatest ease and the tumour clearly definable and peristaltic. It was sometimes present when the child was not in obvious pain, but when the abdomen was quite normal to palpation, as it not infrequently was, his manner became alert and vivacious. He was then a happy and apparently quite healthy child.

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* A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine at the Provincial Meeting held at Manchester on June the 18th and 19th, 1920.

The tumour was 2 to 3 in. in thickness and from 6 to 15 in. long, usually a little curved, and typically sausage-shaped. It was visible by inspection. When the tumour was palpated we at once thought the condition was an intussusception; indeed the child was shown at a meeting of the Leeds and West Riding Medico-Chirurgical Society, and the almost universal diagnosis was chronic intussusception.

The stools were normal throughout. An X-ray examination by Dr. Scargell proved practically negative. Six hours after a barium meal the barium filled the terminal 9 in. of the ileum, and was present in the cæcum, ascending and transverse colon. A small amount of barium was noted in a loop of small intestine just above and to the left of the umbilicus. Subsequent findings at operations would lead me to suppose that this was at the site of and had been "held up" by the growth. A barium enema immediately reached the cæcum and gave a perfectly normal presentation of the whole of the large intestine.

I was not satisfied with the favoured diagnosis of chronic intussusception to explain all the observed conditions, regarding it, as well, as inconsistent with the absence of certain signs and symptoms. The tumour was clearly a contracting coil of bowel; from the variability of position it was equally clearly a contracting coil of the small bowel. This was also confirmed by the absolute normality of the large bowel on X-ray examination. From the periodic and complete disappearance of the tumour, if an intussusception, it would obviously have had to be of the "in-and-out" variety, and a lesion of this duration transcends my experience. A further difficulty on this hypothesis would seem to be the occasionally great length of the tumour (as much as 15 in. being noted). The variability of the site of the tumour pointed to its position in such a part of the small bowel as was free to move, and was therefore not at the beginning or end portions of that tube. It was therefore fairly obvious that this tumour-forming loop of small intestine must *carry its lesion with it*—that is, the lesion must be in the wall or lumen of the gut, and was not a lesion imposed on it from without, for that would have been inconsistent with the wide range of mobility observed.

It was also fairly clear that the obstruction was never more than partial, but beyond this point it was difficult to arrive at certainty. From the complete intermission of both tumour-formation and symptoms, it was difficult to posit a lesion confined to the *wall* of the gut with a hypertrophied coil proximal to it. The stenosis would have had to be considerable, and to produce such a considerable degree of gut contraction behind it it would surely have been visible by X-ray examination, and a cause of notable delay in the downward passage of the meal. This was not the case. I therefore thought the *lumen* was probably encroached upon by a tumour which was capable of varying its position ; that it was probably something in the nature of a pedunculated and polypoid growth. One would naturally suppose this to be non-malignant on the grounds of probability. A tuberculous lesion seemed entirely unlikely.

My final diagnosis, therefore, was a tumour, probably polypoid, pedunculated and non-malignant, projecting into the lumen of the small intestine at some distance from its fixed ends, and by some degree of mobility within the lumen causing recurrent partial obstruction, with spasm of the gut immediately proximal to the lesion.

Laparotomy was performed on May the 12th by my colleague, Mr. Coupland. A mesial incision was made and the loop of bowel containing the lesion presented immediately. It was felt to be some kind of stricture and a few small glands were noted on the surface. It was regarded at the moment as tuberculous, and enlarged glands in the adjacent mesentery were carefully sought for but not found. Some 3 in. of bowel were excised. Recovery was uneventful.

Later, when I saw the specimen, I was convinced from external examination that it was not tuberculous, and on laying open the bowel the small polypoid mass was revealed. It was oval, about ¾ in. by 1¼ in. in diameter, and projecting ¾ in. into the lumen, a typical button-growth and obviously malignant, the small glands on the external surface being infiltrated. Histological examination was made by Prof. Stewart, who reported that it was a spindle-celled sarcoma.

In reviewing the case, the diagnosis, though not completely accurate, was an approximation to accuracy. The malignant nature of the growth was surprising and remarkable, but not more so than the variable but considerable degree of obstruction which it caused. To explain this I had postulated a growth movable in the lumen ;

this was not the case, and one can only suppose, therefore, that there occurred a kinking or angulation at the site of the tumour. Otherwise the obstructive phenomena are inexplicable.

The long history of the case and apparent solitariness of the growth point to a low degree of malignancy. This was further supported by the absence of detectable enlargement of the mesenteric glands. It is rather too much to expect a radical cure in this case, but that time will prove.

Sarcoma of the small intestine is a rare lesion and is usually lymphosarcoma. Further, its growth is usually rapid, with considerable tumour-formation and cachexia; stenosis and obstructive symptoms are very exceptional. Apart from a congenital case I have not found an example recorded under four years of age, but I have not exhaustively searched the literature. In all these respects, therefore, the case is very exceptional.

ŒSOPHAGEAL OBSTRUCTION IN YOUNG CHILDREN.

By Hugh T. Ashby, M.D.,
Physican to the Manchester Children's Hospital.

Lately I have come across five cases of obstruction of the lower end of the œsophagus, which I think may be of interest in many ways. The condition is first noticed at the age of ten to twelve months, when solid food should be started. At this age solids are vomited, when liquids, as before, are kept down. The vomiting of solid food is at first thought to be a habit, and due to the child taking to solid food badly. After a time the vomiting of solid food becomes more marked and the condition is thought more seriously of by the parents and the doctor.

The vomiting of solids is not continuous at first, but later on it may be repeated at short intervals. Liquids are generally kept down well, except in well-established cases. Both sexes seem to be equally affected. In all my cases the site of the stricture is about 1in. above the stomach.

Diagnosis.—X rays with bismuth are useful and conclusive, showing how the bismuth collects in the dilated œsophagus above the obstruction. The vomit also does not reach the stomach.

Illustrative cases.—Girl, under observation for three years; aged 4 years at death. The mother states that she has always vomited more or less after solid food and had become worse in this lately (three weeks before death). She had two sisters and one brother. No history of tuberculosis or syphilis in the family; Wassermann reaction negative. First admitted to hospital at the age of 1½ years, when the condition was first diagnosed with the help of X rays. Treatment consisted of careful feeding and dilatation of the œsophagus at short intervals. The child continued vomiting solids, but was relieved by the passage of bougies at regular intervals until admitted to hospital one and a half years later (April, 1920), where she died. She had remained stationary in weight, with some variations for the last one and a half years.

Autopsy.—There was no evidence of mediastinal inflammation. The œsophagus was easily removed from the trachea. There was a well-marked thick fibrous stricture in the œsophagus 1 in. in length and about 1 in. above the cardiac end of the stomach. The œsophagus above the stricture was slightly pouched and had thick walls. The lumen of the stricture just allowed a fine probe to pass through. A section of the stricture showed much hypertrophy of muscle with an excess of fibrous tissue.

Treatment.—Treatment consists in keeping the food as liquid and soft as possible during the time that the spasm is severe, and in feeding, if well, during the quiescent period. The stricture should be dilated carefully with œsophageal bougies at regular intervals, and with this treatment the children generally, and anyhow for a time, keep fairly well. Directly the dilatation is left for more than two to three weeks the vomiting starts again. The parents get to know this, and become very regular in bringing their children to hospital. Often, however, the stricture becomes so tight that an anæsthetic is needed to pass the bougies, but under an anæsthetic they pass easily.

In future, with well-marked cases, I think it would be well to do an early gastrostomy and to feed the child entirely by this way for some weeks, so as to give the stricture an entire rest from the irritation of food.

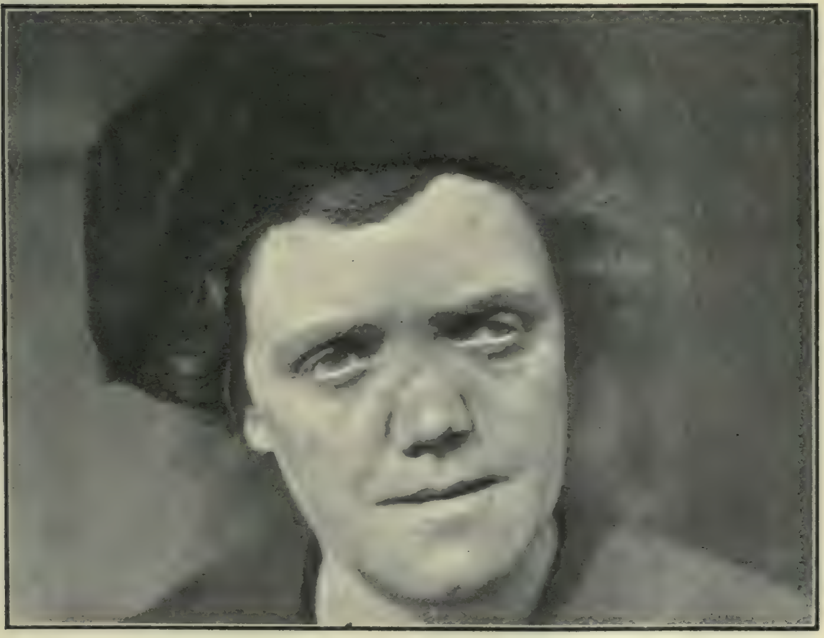
Pathology.—I think it likely that the condition is primarily spasmodic in origin and later becomes fibrous as in the case just recorded. The œsophagus is the narrowest and most muscular part of the alimentary tract with the exception of the pylorus. This being so, it is natural to put the condition on a par with hypertrophic stenosis of the pylorus. In favour of this is the fact that the stricture is always in the same place about 1 in. above the stomach. The symptoms resemble hypertrophic stenosis of the pylorus in that food is often kept down for a short time, then later on is regurgitated.

There is no history of swallowing caustics or of injury, and it is unlikely that an ulcer would cause the condition and be always in the same part of the œsophagus.

TRANSMITTED CONGENITAL SYPHILIS.

By D. H. Paterson, M.D.,
Medical Registrar and Pathologist, Hospital for Sick Children, Great Ormond Street.

The following is a case of interest, as it seems to prove beyond a doubt that congenital syphilis may be transmitted from mother to child, a fact that is not generally admitted.*



The patient was a child aged 2½ years. The complaint was that he was backward. He was admitted under Dr. Robert Hutchison to the Hospital for Sick Children, Great Ormond Street. He had the characteristic facies of congenital syphilis and seemed a very mentally deficient child. His Wassermann reaction was positive. Owing to his restlessness it was impossible to obtain a satisfactory photograph. His mother, whose photograph accompanies this note, shows the very characteristic features of congenital syphilis, and her Wassermann reaction was + + +. She had suffered as a child with interstitial keratitis and showed faint traces of the affection on examination. Note the depressed bridge to her nose and the well marked external strabismus. Her age was thirty-three and that of her husband thirty-two. She has one child aged 9 years which does not appear syphilitic. Then comes the patient, and then a miscarriage, and finally a baby aged 2 months.

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* Still, Power and Murphy's "System of Syphilis," Vol. i, p. 289.

The father's Wassermann reaction is negative and the baby aged 2 months has a negative Wassermann reaction also.

The mother's mother or the maternal grandmother died of locomotor ataxia. She gave birth to several children, but only the last two survived, the others dying at an early age.

The mother's sister is said to be healthy.

Apparently, then, the disease has been transmitted from the maternal grandmother to her daughter, who has given birth to a syphilitic child, the patient. The possibility of the mother of the patient having become reinfected prior to his birth has been considered, but there is no reason to believe that such was the case.

I have to thank Dr. Robert Hutchison for allowing me to publish this case.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Provincial Meeting held at Manchester June the 18th and 19th, 1920.

The President, Mr. J. P. Lockhart-Mummery, *in the Chair.*

Testing and Grading of Cardio-respiratory Power among School Children.—Dr. A. A. Mumford stated the ordinary "resting" breathing of young children was almost entirely abdominal, being constituted by movements of the abdominal walls and spine as well as by movements of the diaphragm. The breathing of effort in childhood was a compound partly of an increase of abdominal breathing and partly of an upper chest movement. The upper chest movement was at first largely confined to the left of the sternum, but with the development of the shoulders and outgrowth of the upper ribs, which occurred about the age of six years, a lateral expansive movement occurred. Muscular efforts of varying range of amplitude and force produced varying degrees of pressure of air in the lungs. By measuring respiratory pressure, then, the influence of age and of vital powers was seen. In children under eight years old or in those undeveloped owing to rickets and tuberculosis it was difficult to use the spirometer. By getting the child to breathe slowly into an ordinary U-tube mercurial manometer some measure of respiratory power could be obtained. Two tests should be taken, one of respiratory *range*, by noting the height to which the mercury would ascend, and the other of respiratory *power*, by measuring the duration of time in seconds in which it could be sustained at a low pressure. The deficient respiratory power in rickets as well as in tuberculosis and in compensated heart disease was readily revealed. This simple test might also be used to record fatigue, for there was a great difference in the results obtained in ailing children after exercise and after rest. The second respiratory test for children over six years old, who were still too immature or too weakly to use the spirometer, was that of the calipers. As the abdominal breathing was the primary one, measurements should be taken from the back at the level of the tenth rib. In delicate children, or in those suffering from nasal obstruction or from root of the lung disease, there would be no appreciable increase in the lateral diameter. When the increase amounted to two or more centimetres then whatever the physical signs of the lungs, one had the satisfaction of knowing that active metabolism was going on in the body, which would be a potent factor in deciding the result of the effort towards recovery. So valuable and constant was this sign of free lateral movement at the tenth rib that it had been regularly used as a deciding point to determine whether the child should be allowed to be in the open-air recovery home or attend ordinary school. The spirometer was available for children who had full control over their voluntary muscles. Hutchinson's spirometer and the ordinary gas meter were too bulky for carrying about, but were very reliable. The dry meter required watching and re-testing from time to time, but was very handy. The air meter was a portable and combined instrument which registered lung capacity as well as vital capacity. If used for young children as well as for adults it would need double calibration, for the amount of air which passed through it varied with the pressure. It was of great value in measuring the respiratory power of boys entered for athletic contests, etc., but at present was not very valuable for testing young children. The cardiac tests consisted in stating the effort of exercise—first on shortness of breathing, secondly on increase of pulse-rates, and thirdly on length of time taken to return to normal. If combined with ordinary methods of physical examination these heart tests were very illustrative, and served to distinguish the functional from the organic and toxæmic heart in carditis.

Nasopharyngeal Toxæmia and Examination of Swabs of the Naso-pharynx.—Dr. A. Sellers and Dr. C. T. Lapage.—The clinical aspect of the cases was dealt with by Dr. Lapage, who expressed the opinion that naso-pharyngeal toxæmia was a very important disease in children and caused the following troubles: (*a*) Anæmia and debility with lassitude and general lowered health; (*b*) loss of appetite; (*c*) headache; (*d*) frequent colds; (*e*) heart symptoms and signs, of which the condition corresponding to the D.A.H. of soldiers was the most frequent; (*f*) symptoms and signs usually attributed to rheumatism, of which growing pains and tic or habit-spasm were the chief; (*g*) nervousness and mental depression. Since most of the symptoms could be produced in the early stages of tuberculosis, and since many of them could be produced by bad feeding, loss of sleep and unhygienic conditions, the diagnosis was often difficult. Examination of swabs from the naso-pharynx by Dr. Sellers in cases with signs and symptoms of toxæmia showed that the number of organisms was increased in many of the cases, indicating that a vicious circle might be established by some illness, such as influenza, which had affected the naso-pharynx. The lowered general health allowed of more organisms, and the large number of organisms lowered the general health. As regards vaccine treatment, it was difficult to isolate definitely from ordinary nasal swabs organisms which gave a clear indication for a specific vaccine.

Œsophageal Obstruction in Young Children.—Dr. Hugh T. Ashby (*vide* p. 195).

Psycho-therapy in Early Childhood.—Dr. A. Dingwall Fordyce stated that psycho-therapy was one of the most valuable means of treatment, and that not only were successful results attainable in early childhood, but that was the time *par excellence* when they were of the greatest value. Whether mother or nurse, the person in charge of a young child should be a woman who, in addition to ordinary knowledge and capacity for dealing with children, was also capable of responding beneficially to the individual mentality of the child. She must understand the inherent desires of childhood and the natural tendency to negativism, and she must be capable, without exercising undue influence or admitting undue licence, so to make use of those characteristics as to render them aids in her welfare for the child. For instance, she must avoid laying undue stress upon the necessity for carrying out any ordinary function of the body—eating, sleeping, urination, movement of the bowels. Undue emphasis often aroused the negativistic trait and defeated its own object, when a less obvious insistence resulted in satisfactory execution. Psychotherapy was applicable in practically all diseases of childhood, and good results were obtained when it was suitably applied and suitably combined with other methods.

Primary Sarcoma of Small Intestine Causing Unusual Symptoms.—Dr. W. Maxwell Telling (*vide* p. 192).

Epileptic Convulsions in Children with Marked Intestinal Abnormalities.—Mr. J. H. Watson reported three cases in which removal of the appendix, division of bands and plication of the cæcum was followed by decided improvement in the convulsions.

Melæna neonatorum Treated by Injection of Fresh Citrated Blood.—Dr. C. P. Lapage stated that though injection of fresh blood was a very valuable remedy, care had to be exercised because of the danger of a reaction if the two bloods were not suitable—that is, if the blood of a recipient agglutinated the cells of the donor or *vice versâ*. The donors and recipients were divided into four groups, and in these the universal donor group comprised 46·2 per cent. In melæna neonatorum it was questionable whether the problem of agglutination was as important as in cases where large amounts of blood had to be used. In the newborn infant only 15–20 c.c. need be used. According to Lee the grouping was not established at birth, but took place during the first year of life. Dr. Lapage described two cases. Case 1: The child was brought blanched to hospital with a severe attack of melæna neonatorum; 20 c.c. of blood was drawn from the arm of one of the clinical clerks, mixed with 7 gr. of sodium citrate, and injected into the infant's external jugular vein. The next day the melæna had ceased entirely and there was no recurrence. The coagulation time of the infant's blood was approximately 17 minutes. Three weeks later it was normal—about 9 minutes. Case 2: The infant, who had had very severe melæna, was injected with 15 c.c. of blood obtained from a friend of the father. The melæna ceased at once, and except for passage of two more stools, which contained meconium mixed with blood and which had probably been in the intestine before the injection, the child made an uninterrupted recovery. The coagulation time was about 17 minutes, but a week later it came down to about 10 minutes.

Fragilitas ossium with Blue Sclerotics.—Dr. CATHERINE CHISHOLM showed a girl, aged 8 years, with typical blue sclerotics and traces of seven fractures, one in the right arm and the others in the legs. There was no otosclerosis, no peculiarity in the shape of the head, no family history, but the mother had suffered from dyspepsia during pregnancy. When first seen the girl showed physical and mental signs of thyroid deficiency. Great improvement had followed administration of thyroid, calcium and cod-liver oil, together with massage and electricity. She was now bright, and could stand and walk with assistance.

Partial Fracture of Radius and Ulna in a Breast-fed Infant aged 6 weeks.—Dr. C. CHISHOLM.—There was sudden swelling, tenderness and loss of motion of the right forearm, from which recovery took place in less than a week. X rays showed partial fracture of both bones. There were no blue sclerotics, nor was there a family history of fragility of the bones. The mother had worked very hard during pregnancy, though well fed and in comparatively easy circumstances.

Double Sprengel's Deformity.—Dr. CHISHOLM.—A skiagram showed a mass of bone on the right side extending to the occipital bone. Movement of both arms was very good. The infant was 8 months old.

Renal Infantilism.—Dr. E. BOSDIN LEECH.—The patient, a girl, aged 16 years, had always been small, being smaller at five years than a niece two years old. Her legs were straight until she was thirteen. Since then she had developed acute genu valgum and varum of both legs. The urine, when she was first seen four months ago, contained much albumin; now it showed a mere trace. The systolic blood-pressure was just below 100 mm. Hg. Mental development was somewhat backward.

Congenital Absence of Pectoralis Major and Minor; Elevation of the Scapula.—Mr. GEOFFREY JEFFERSON showed a child aged 9 years, who presented Sprengel's shoulder with associated deformities. The pectoral portion of the pectoralis major was absent, the clavicular head being intact. The hand on the affected side, the left, was distinctly smaller than the right, and the fingers webbed up to the proximal interphalangeal joints. The elevation of the scapula was of the ordinary type without bony spurs. X rays showed that there was no vertebral or other abnormality.

Bilateral Baker's Cysts; Recurrence after Operation. — Mr. JEFFERSON.—Some twelve months ago the patient, a child aged 6 years, showed swellings behind the knees; they gradually increased in size until there were two small lumps present the size of pigeons' eggs. An operation was performed on both legs, but two months later the child had a fully developed recurrence. There were now two typical Baker's cysts, reducible on pressure when the knees were flexed. The precise nature of the operation was not known, but presumably it was not very radical. The case showed that thorough removal was necessary. There were no signs of disease in either joint.

CLINICAL SECTION.

March the 12*th,* 1920.

Microcephaly in two sisters, children of first cousins.—Mr. W. G. Spencer showed these two cases, aged 3 and 1½ years respectively, shortly after craniectomy. The parents were both perfectly healthy, aged between 20 and 25 years, and except that they were first cousins, there was nothing in their personal or family history to explain their children's condition. The operation was performed on the elder child at one sitting and caused no perceptible shock. On the younger child it was done in two stages at a fortnight's interval. There was a little shock after the first, and none after the second stage. The operation consisted in making an incision over the sagittal suture with a short horizontal cut at each end. Then holes were bored in the frontal bone just in front of the coronal suture, one on each side, and the same in the occipital bone behind the lambdoid suture. By means of a circular saw and rongeur forceps, a strip of bone was removed from each parietal bone about 3 cm. in breadth, but tapering at the ends, so as to join the hole in the frontal bone with that in the occipital, thus cutting across both the coronal and lambdoid sutures on each side. After this a strip of bone about 1 cm. in width was removed between the two holes in the frontal bone, a little in front of the coronal suture. Both skulls were thin, like those of a baby under a year. The lines of the sutures were occupied by ridges of soft bone. There was nothing abnormal about the exposed dura mater. The intracranial pressure was not above normal.

The children were now in the same state as before the operation; the gaps made in the skull showed no sign of intracranial tension. In the region of the left parietal eminence of the younger child, the brain was felt protruding and pulsating under the scalp.

SECTION OF DERMATOLOGY.

May the 20th, 1920.

Case of Lymphangioma.—Dr. J. L. Bunch showed a girl who had had lymphangioma since birth. The angiomatous element was very evident. It was circinate, the centre was clear, and the little lesions were distributed more or less as a circle around. Dr. Bunch stated that the circinate variety of lymphangioma was extremely rare. With regard to treatment, it was necessary to destroy each lesion separately.

Case of Xanthoma tuberosum.—Dr. E. G. Graham Little showed a female infant, aged 3 months. The eruption was noted at birth, and there had been no fresh lesions since then. The eruption consisted entirely of very hard reddish brown tumours about $\frac{3}{16}$ in. in diameter (and about $\frac{1}{8}$ in. above the general skin level), scattered irregularly about the scalp, the face, the upper part of the chest, and less numerously on the forearms. There were well over fifty such swellings. They gave rise to no discomfort, and the child was otherwise in excellent health. On section one of the tumours showed a uniform infiltration of the whole corium right up to the level of the epidermis with a very homogeneous type of round connective-tissue cell. The cells seemed to be arranged in rows like the cells of pigmented nævi, and the tumour was undoubtedly of nævoid character. Such cases were very rare, and could scarcely be distinguished from urticaria pigmentosa except by histological tests.

Case of Onychogryphosis.—Dr. Graham Little also showed a boy, aged 6 years, in whom the nails of both thumbs were converted into claw-like appendages raised from the matrix, curved, with the convexity outward, and about $\frac{1}{2}$ in. long. On the left medius there was an earlier phase of the same condition, the nail being thickened, separated from the matrix, but without the curvature of the thumb-nails. The left hallux was similarly affected. The disease existed for 12 months previously. Scrapings from the thickened area under the nail were negative. The child lived in a mews, which suggested the possibility of ringworm infection.

Epidermolysis bullosa. — Mr. Haldin Davis showed a boy, aged 3 years, in whom the condition was present at birth, and there had been steady progress of the disease since. The nails were very badly formed, and some of them were not formed at all. The teeth were very carious. Since he had been in hospital there had been some improvement, but some fresh bullæ had appeared, stained with hæmoglobin. The patient did not show Nikolski's sign. He was the only case in the family.

June the 17*th*, 1920.

Case of Trichotillomania.—Dr. E. G. Graham Little.—The patient was a girl, aged $4\frac{1}{2}$ years. There were two other children in the family, aged 8 and 5 years, who were perfectly healthy and had shown no similar symptoms. There was no history of epilepsy or night terrors. When first seen by Dr. Graham Little in August, 1919, the scalp over the right parietal area was nearly wholly bald, very much like an X-ray alopecia. The child could be observed to pull her hair herself at all hours of the day but not in her sleep or at night. More recently she had contracted another habit, viz. that of breaking the nail and sucking the fingers. There was no local irritation nor change to be found in the scalp on the side affected, which was probably determined by proximity to the right hand. The habit seemed to have been formed as early as the age of two years, and the hair grew quite normally after plucking and was again attacked. The wearing of a muslin cap had been suggested. Dr. Graham Little had never seen a record of a case developing at so early an age.

In the discussion the President, Dr. A. Whitfield, stated that he had cured a case by keeping the hair clipped to about $\frac{1}{8}$ in. for about two years, during which time the habit was forgotten.

Case of Epidermolysis bullosa.—Dr. GRAHAM LITTLE showed a boy, aged 5 years, in whom the condition was congenital. A previous child had been born with the same condition, and died at the age of 15 days. The parents were healthy, and there was no hereditary history. The nails of the hands and feet were entirely absent, and were stated never to have been formed. The fingers were tapering and slightly atrophied at the tips. There was a patch of congenital dark pigmentation covering the outer border of the hand on its dorsal surface and the greater part of the fifth finger. There were numerous large and small bullæ, many of them hæmorrhagic, on the hands, the forearms, the face and trunk, and bullæ formed with extreme frequency and rapidity on sites of pressure. The teeth had decayed very early. The conjunctivæ were normal, but the mucosa of the tongue was thickened. Speech was retarded, but the child was otherwise apparently of normal intelligence. The blood-count was normal.

Pityriasis rubra pilaris.—Dr. H. W. BARBER showed a child, aged 4 years, in whom the eruption had begun on the head four months ago as scaly patches. There was then no eruption on the face or body. Two months later the face, trunk and limbs became involved rather rapidly. His general health had always been good, except for an attack of chickenpox. The urine showed a large excess of indican, and gave a marked phenol reaction, which was very rare in children of his age. Possibly it had nothing to do with the ætiology of the condition, and was due to his enormous appetite.

Bilateral Morphœa in Children.—Dr. G. PERNET showed two cases. The first was a girl, aged 14 years, who presented two transversely oval and symmetrical patches over the angles of the scapulæ. They were very superficially sclerosed, and had diminished under massage—the only treatment employed. The patient had a poor circulation, and suffered from chilblains in the winter. The second case was a girl, aged 5 years, in whom the patches were very faintly marked, but exhibited a slight amount of lilac bordering. They were transversely oval and situated below the level of the angles of the scapulæ, the right one being a little to the right as compared with the left. The patches had greatly improved under massage.

Case of Oil Acne.—Dr. AGNES SAVILL showed a baby, aged 19 months, who had had camphorated oil frequently rubbed on the chest for so-called bronchitis since the third week of life. For whooping-coogh in March she had had an embrocation which was oily, but different from camphorated oil. Some blackheads appeared early in May, and numerous inflammatory pustules developed after the embrocation was stopped.

Case of Pemphigus.—Dr. J. L. BUNCH showed a boy, aged 10 years, who had developed pemphigus when three days old, and had had recurrent crops of the disease ever since. The trunk and limbs were covered with innumerable small bullæ, some ruptured, but mostly containing a clear fluid and rising from an entirely uninflamed base. There was no herpetiform grouping, no itching, and the general health was unaffected. The contents of the bullæ were sterile. There was no reason to suspect syphilis, and there was no similar disease in the family. The pemphigus improved under local treatment, but the disease always recurred after a day or two.

Vitiligo with Central Pigmented Moles.—Dr. J. L. Bunch also showed a boy, aged 14 years, with a large number of vitiligo patches scattered over the trunk and limbs. They varied much in size and were mostly irregular in shape. A few were definitely circular. On the right side of the neck was a white patch, about the size of a sixpence, and in the centre of this was a small pigmented brown mole. It was elevated slightly above the surface and could easily be felt. On the right side of the chest was a larger vitiligo patch, about the size of a crown, with a similar brown mole in the centre. But the mole was larger, more elevated, and rather darker in tint. Over the right scapula was another white patch, about 4 by 1½ in., oval, and sharply marked off from the surrounding healthy skin. Running on its long axis was a large brown pigmented mole about 3 in. long. It was raised about ¼ in. above the surface, was papillomatous, and covered with coarse, rough scales. Dr. Bunch referred to a similar case which he had shown in January, 1918 (*vide* British Journal of Children's Diseases, 1918, xv, p. 43).

As regards treatment, he proposed to excise the largest mole. He had recently seen a case in which similar pigmented moles remained quiescent for many years, and then rapidly took on the characters of melanotic sarcoma.

Urticaria pigmentosa.—Dr. Bunch also showed a baby, aged 9 months, covered with brown urticarial lesions, some macular and some definitely raised. The lesions varied in size. There was little irritation, and the baby only scratched at night.

SECTION OF LARYNGOLOGY.

May the 7th, 1920.

Baby with Depressed Bridge of Nose.—Mr. W. Douglas Harmer.—No abnormality was noted at birth; the infant was breast-fed for three weeks, had marked snuffling, difficulty in breathing through the nose, and occasional discharge. The bridge of the nose began to drop when the child was three weeks old and the deformity had steadily increased. X rays showed that the nasal bones were depressed, but there was no evidence of destruction or fracture. The child was well nourished, had had no rash nor enlargement of the spleen. The Wassermann reaction was negative in the mother and child.

Congenital Deformity of the Œsophagus.—Mr. W. Appleyard showed a specimen of congenital deformity of the œsophagus removed from the body of a sixteen days old female child who died from starvation as a result of the defect.

Latent Sinusitis in Children.—Dr. P. Watson Williams stated that while infective sinusitis in adults, associated, as was usually the case, with symptoms suggestive of a sinus infection, was very commonly suspected and diagnosed, similar conditions arose in children of all ages, but were more likely to remain undiagnosed unless attended with acute or manifest symptoms. Acute sinusitis in infants was rarely localised, but involved the nasal mucosa and the relatively undeveloped sinuses as a whole, usually with symptoms of purulent rhinitis, which might become chronic or subside into a recurring non-purulent nasal catarrh or eventuate in cure; or, on the other hand, result in producing a large area of external suppuration as described by Skillern. In children between the ages of four or six and fifteen years a nasal sinus infection was more liable to be localised, and occasionally with symptoms such as led one to suspect nasal sinusitis in adults. A chronic or recurring nasal catarrh in a child was usually attributed correctly to adenoids or to infected tonsils, and if the symptoms persisted after an operation for their removal, the child was supposed to have a recurrence of enlarged tonsils and adenoids, and a second, and sometimes a third, operation was performed, The symptoms of chronic latent sinusitis were essentially similar to those of infected tonsils and adenoids, *viz.*, a recurrent nasal catarrh, buccal respiration, catarrhal deafness, aprosexia, mental backwardness, and chronic sepsis. In the sphenoidal sinus cases especially, other symptoms might arise, such as restriction of visual and colour fields, but if they were not suspected and sought for, they passed unnoticed. More serious symptoms of chronic sinus infection were the results of infecting organisms passing continually on the one hand into the gastro-intestinal tract and sometimes affecting the appendix; while on the other hand the trachea and lungs might become involved, tracheitis, pneumonia, and possibly a tuberculous infection being determined. Diagnosis: a persistent anterior unilateral nasal discharge was highly suggestive of a sinus infection provided the presence of a foreign body could be excluded. A posterior rhinoscopic view showing pus or muco-pus in one choana was similarly strong evidence of a nasal sinusitis. Examinations must be made on more than one occasion to eliminate the possibility of an adventitious collection being mistaken for persistent secretion. The most useful methods of examination in the writer's experience were (*a*) endorhinoscopy, and (*b*) exploration of the sinuses by the suction syringe. (*a*) Endorhinoscopy in children from the age of seven onwards was often possible with local anæsthesia, but, on the other hand, was often impossible without a general anæsthetic. When a definite streak of pus was observed to be coming from the spheno-ethmoidal region or from the middle meatus of one or both sides, the evidence of the corresponding sphenoidal or antral cavities being the source of the purulent discharge was almost conclusive. (*b*) Exploration of the maxillary antral and sphenoidal sinuses by means of the suction syringe was most valuable, but necessitated a general anæsthetic in children. If definite pus was sucked into the syringe one had clear proof of the cavity being infected. Unfortunately the exploration of the sphenoidal sinus in young children was far less easy than that of the maxillary antra and not so free from risk.

SECTION OF OPHTHALMOLOGY.

November the 5th, 1919.

Injury to the Fundus Oculi at Birth.—Mr. H. R. JEREMY.—The patient was a girl, aged 7 years The mother had noticed an external squint of the right eye since the child was seven months old. The birth of the child was attended with difficulty and the left eye was injured. On admission there was left external strabismus of the left eye, which fixed badly. There was no muscular paresis. Vision consisted of perception of light only. Vision in right eye was $\frac{6}{18}$. The left cornea was clear, pupil equal to right, reacted to light directly and consensually, and to accommodation. The media were clear. The disc was paler than normal, and appeared sunken above; the retinal vessels were contracted and passed directly over the lower edge of the disc without distortion. Above and to the outer side of the disc there was a mass of connective tissue extending outwards towards the macular region. Retinal vessels were seen running over the mass and disappearing below the upper edge of the disc.

Case of Birth Injury.—Mr. W. H. McMullen showed a girl, aged 7 years who had had much bruising of the left eye at birth. Delivery was carried out under chloroform. The mother did not know if forceps were used. The eye had always looked smaller than the other. At the present time there was left enophthalmus with slight downward and outward strabismus; the ocular movements were good. The left eyeball was smaller than the right. Transverse diameters of corneæ: Right 12 mm., left 11 mm. There was a large mass of fibrous tissue in the vitreous, of roughly conical shape, extending from a broad irregular base, covering the disc, to a small irregular head at apex just behind the lens. There was a good deal of pigmentation about the base. Direct pupillary light reflex absent, consensual present. The mass of fibrous tissue in the vitreous was probably the result of hæmorrhage due to birth injury—possibly avulsion of the optic nerve.

Partial Avulsion of the Disc, with Ectasia.—Mr. W. H. Simpson.—The patient, a boy, aged 12 years, was struck in the right eye by a firework on June the 27th, 1919. On the same day he was admitted to hospital. On admission the right eye showed a small wound of the conjunctiva between the limbus and the outer canthus. The pupil was irregularly dilated and was tucked back on the outer side. The lens was clear and dislocated inwards. There was much vitreous hæmorrhage and commotio retinæ, which obscured details of the fundus. He could perceive light with the eye, projection was defective down and in and the tension was subnormal. The left eye was normal with a vision of $\frac{6}{6}$. The patient was kept in bed for three weeks with atropine in the right eye. On July the 23rd the vitreous had partly cleared and there was no commotio retinæ. The retina was seen to be in position but the disc was obscured by an unusual appearance, details of which, owing to the state of the vitreous could not be made out till August the 2nd, when a good view was obtained. The disc was then seen to be included in a horizontally oval ectactic are bounded internally by the nasal margin of the disc and extending outwards towards the macula. The area presented a much paler reflex than the rest of the fundus, and was sharply defined, except below, by superficial retinal pigmentation. Round the macula there was pigmentation and some cicatricial tissue formation. The retinal vessels, on entering the area showed a decided bend similar to that seen in early glaucomatous cupping and once in the ectasia they were out of focus. The walls of the ectasia were steep at the disc, above and below, but towards the macula the slope was more gradual. The ectasia was rather too shallow for accurate measurement; the disc was the deepest part and the vessels there were brought into focus by − 2 dioptres. Below the area there was much retinal degeneration, and at the periphery the only abnormality was guttate pigmentation. The patient could count fingers at 6 in., projection was defective down and in, and the tension was subnormal.

February the 4th, 1920.

New Growth of the Retina.—Mr. N. Bishop Harman.—A boy, aged 4 years, was seen late in October, 1919. His doctor thought there was cataract in the left eye. The boy was a little fellow, but his parents, too, were unusually small. He was an only child. His health was good. There was no defect other than that of the eye. The Wassermann reaction was negative. The mother stated that she noticed something wrong with the left eye when he was fourteen months old. When she was teaching him to walk the light came from behind her and made his eye shine; she saw the reflection several times, but thought nothing of it until her doctor observed it. The right eye was healthy; there was nothing out of the natural order except 1 D. of hypermetropia. The left eye was immediately noticeable owing to the presence of a large white, oval body behind the lower part of the iris; it looked just as if the lens were dislocated and opaque. Focal illumination brought out this oval mass in strong relief and illuminated the whole of the interior of the eye. Examination with the ophthalmoscope showed the whole of the fundus to be covered to a fairly uniform depth from ciliary region to centre and in almost every part with masses of white material. The masses were all more or less spherical; they varied greatly in size; some were but little larger than the diameter of a vein at the disc, others were as big as a dislocated lens. Most of the masses were separate from each other—that is, they had no visible connection—but close to the central region there was a pair attached, shaped like a cottage-loaf of bread. Most of the masses were immobile, but two or three in the centre floated with the movement of the eye; they did not leave their positions, but swayed so freely that their attachment (whatever that might be) must have been very slender, and the vitreous must have been fluid to allow of the movement. The masses were white, with a suggestion of transparency; they had a nap or slightly fluffy surface that suggested solidity. With one exception no blood-vessels could be seen in connection with the masses; the sole exception was a fine vessel curling round a mass in the upper and outer part of the fundus. In a very few spots the colour of the fundus could be seen between the masses; in these small areas the vessels seen had an irregular distribution. Transillumination gave an appearance which was difficult to make out; light entered the eye between and around the masses, but it also appeared to pass through the masses and to be inversely proportional to their size. Until fourteen days ago the eye had caused no sense of discomfort, and there was a total absence of symptoms of irritation. The cornea, lens and iris were normal; there was a consensual pupillary reaction, and the vitreous was free from opacity where there were no white masses. In the last fortnight there had been pain in the eye, the vessels of the conjunctiva and ciliary region had been enlarged and the iris discoloured; the tension of the eye had increased. Until these signs appeared Mr. Harman had hesitated to advise the removal of the eye. The long period of the known presence of a reflecting mass in the eye (three years), the total absence of any sign of irritation, the absence of change during repeated examination over three months, the unlikeness of the appearance of the masses to any usual form of glioma, left room for uncertainty as to the danger of the eye. The change in the last fortnight left none; but the parents refused to allow the removal of the eye.

The appearance of the fundus was remarkable. Mr. Harman did not remember having seen anything at all approaching this character before and could find no description of a similar growth.

Addendum (June the 22nd).—As a result of the statement made to the mother of the child by various members at the meeting she agreed to the removal of the eye. The operation was performed two days later. A long length of nerve was removed with the eye. The free end was found to be healthy, but close to the globe there was a suspicious knuckle. After hardening, this was cut and found to be part of the new growth, which was a glioma. The orbit was watched carefully; one month later the socket was seen to be bulging suspiciously. The contents of the orbit were therefore exenterated, including the stripping of the periosteum.

After hardening, the contents were cut across and new growth was found in the centre. The outside of the excised mass was free from growth.

The cavity was now clean and would be shortly grafted. The boy would be kept under regular observation and report made later if there were any further signs of recurrence. His general health remained good.

June the 9th, 1920.

Herpes Ophthalmicus in a Child aged 3 years.—Mr. G. W. ROLL showed a child in whom the attack occurred in February simultaneously with chickenpox, the latter affecting the whole body. The eruption on the brow had the typical distribution of herpes ophthalmicus and the scarring was very definite. Some of it travelled down the nasal nerve to the tip of the nose, and the cornea was also affected. There was no surface lesion and no involvement of the iris. There was no oculo-motor paralysis. Mr. Roll alluded to a case reported by Barber of a child, aged 6 years, who had simultaneous herpes ophthalmicus and herpes zoster.

In the subsequent discussion the President, Mr. W. T. HOLMES SPICER, said that he had seen several cases of the association of herpes ophthalmicus and chickenpox.

Mr. J. H. FISHER said he had seen a family in which one member had chickenpox and the other herpes ophthalmicus. He had also seen an infant under 12 months of age with herpes ophthalmicus and was struck with the fact that the baby was not inconvenienced by the attack, although it was a severe one from the cutaneous and ocular point of view.

Mass Obscuring the Optic Disc.—Mr. J. F. CUNNINGHAM showed a boy, aged 5 years, whose left eye had been struck by the handle of a scythe about 9 months previously. Right vision: $\frac{6}{9}$. Left vision: No perception of light, tension normal. There was a mass in the position of the nerve-entrance coming far forward into the vitreous and numerous folds were seen extending down and in front. There was some choroidal disturbance in the region of the posterior pole.

Congenital Malformation in the Outer Canthus.—Mr. W. H. McMULLEN showed an infant in whom the outer extremities of the lids were separated by a low pad or cushion covered with skin which passed on to the conjunctiva. He did not think that there was a dermoid there; there was only a thin cushion of subcutaneous tissue; there was no deformity of the outer margin of the orbit, and the limits of the subcutaneous swelling were not well defined.

Abstracts from Current Literature.

Surgery.

Congenital cysts of the neck (*'La Pediatria,'* 1919, XXVII, *p.* 790).—**C. Romano,** who records six illustrative cases in children and adults, states that compound or multilocular serous cysts of the neck occurring in intrauterine life are more or less well developed at birth, and sometimes of an enormous size, whereas dermoid cysts do not appear until some years afterwards—as a rule not before puberty or adolescence and sometimes even later. The site of predilection for serous cysts is the left side of the neck, where they often develop in the subcutaneous tissue and sometimes in the subaponeurotic tissue. As a rule they do not cause any inconvenience. The only rational treatment for dermoid cysts is removal, the operation usually not offering any great difficulties. In the case of multilocular serous cysts extirpation is often impossible owing to the size and adhesions with the tissues and neighbouring organs. J. D. ROLLESTON.

Congenital absence of both clavicles (*'Journ. Amer. Med. Assoc.,'* 1919, LXXIII, *p.* 1526).—**W. G. Stern** reports a case of a boy, aged 6 years, who had an entire absence of both clavicles, except small rudiments about half an inch long articulating with the sternum and bearing the origin of the clavicular portion of the sterno-cleido-mastoid. There were no other anomalies. The absence of clavicles did not interfere with the use of the arms or diminish the strength of the muscles in this region. The patient's two brothers, father and the father's three brothers were similarly affected, but the patient's sister and the father's three sisters were normal in every way. J. D. ROLLESTON.

Congenital malformations of the spine (*'New York State Journ. Med.,'* 1919, XIX, *p.* 161).—**C. D. Reid** mentions among possible causative factors: (1) Heredity. (2) Maternal pelvic anomalies, maternal trauma, faulty nourishment from the maternal circulation, oligohydramnios, amniotic adhesions, placental malformations, multiple pregnancies. (3) Intrauterine diseases of the fœtus, such as rickets, syphilis, etc. (4) Anomalies of muscular development. Among the malformations considered are spina bifida, congenital scoliosis and cervical rib. The following conclusions are reached: (1) Congenital effects of the spine are by no means as rare as they were formerly supposed to be. (2) Radiographic study of all cases complaining of backache, or cases presenting visible deviations from the normal curves, no matter how slight, should be made, as frequently the diagnosis will be at once cleared up, and the patient saved a long, expensive period of medication or inefficient mechanical treatment and kept out of the hands of charlatans and quacks. (3) Treatment of congenital scoliosis in patients of adolescent or adult age is frequently more satisfactory than in cases of acquired curvatures. (4) Operative measures are for carefully selected and skilled operators. J. ALLAN.

Statistics of spina bifida (*'La Pediatria,'* 1920, XXVIII, *p.* 32.)—**R. Vaglio** gives the following statistics of spina bifida observed at the Pædiatric Clinique of Naples University from 1913–1919. Twenty-three cases were found among about 10,000 infants, or 1 in 434. Thirteen were females and 10 males. Most of the children were brought to the hospital a few days after birth, less frequently in the first few months, and only two cases were not seen until they were 1 and 2 years old respectively. As regards the situation of the lesion, apart from one case of double spina bifida, the tumour in the largest proportion of cases (12) was in the lumbosacral region, in 3 in the sacral, in 3 in the lumbar, in 2 in the dorsolumbar, and in 2 others in the lower dorsal and cervical regions respectively. The size of the tumour varied, as a rule, from that of a large walnut to that of a large orange. In only one case was the tumour considerably bigger, being about the size of a fœtal head. The skin was almost intact in 8 cases, intensely reddened and vascular in 5, and ulcerated in 7, in 3 there was an escape of cerebro-spinal fluid. In only 1 case was there a tuft of hair present over the tumour. As regards the family history, syphilis was noted in only 3 cases, in another 6 cases its presence was shown either by the hereditary history and clinical evidence or Wassermann reaction. In only 1 case was the existence of other cases of spina bifida in the ascendants or collaterals noted. In one case the mother was tuberculous. As regards concomitant affections, 7 cases had hydrocephalus, 6 club-foot, 4 paralysis of the lower limbs associated in two with club-foot, 1 had Little's disease, 1 cleft palate, 1 multiple malformations of the anus and genitals, and 1 multiple small nævi of the scalp.

J. D. Rolleston.

A case of encephalo-meningocele (*'La Pediatria,'* 1920, xxviii, *p.* 230).—**A. Versari** describes the case of a male child, aged 4 days. In the occipital region was a swelling the size of an orange, normal in colour at the periphery, bluish at the centre, soft in consistence but not fluctuating. It was removed without anæsthesia, the child making an uneventful recovery without showing any appreciable functional lesion or nervous disturbance. Death, however, took place two months later of malnutrition. The tumour consisted of a meningeal cyst surrounded by gelatinous connective tissue. Histologically, definite cortical nerve-cells were absent.

Vincent Dickinson.

Anomaly of the diaphragm (*'Amer. Journ. Dis. Child.,'* 1920, xix, *p.* 55).—**L. R. Debuys** records a case of herniation into the thorax of the stomach, transverse colon and great omentum in a female child, aged 4 months. Gastric and intestinal obstruction resulted. Death from shock occurred during the operation. The defect of the diaphragm through which the hernia took place was a developmental error, which occurred at the point at which in the developmental progress of the membranum transversum the attachment is completed last, namely, on the left side and posterior aspect.

J. D. Rolleston.

A study of achondroplasia (*'Amer. Journ. Dis. Child.,'* 1920, xix, *p.* 1).—**T. F. Wheeldon** states that achondroplasia is characterised by symptoms of dwarf growth (shortness of extremities, vertebral column and chest and looseness of the skin) and symptoms of infolding (shortening of the basis cranii, sagittal narrowing of the foramen magnum, depression of the nasal bridge, narrowing of the choanæ, reduction in the size of the sella turcica, with consequent reduction in the size of the pituitary body and changes in the spine). The changes in achondroplasia which are produced between the third and eighth weeks of intra-uterine life are probably due to the smallness of the amnion except in rare cases. Wheeldon records six illustrative cases, two of which presented a new symptom, viz. a wedge-shaped vertebra, which he classifies among the group of symptoms of infolding. J. D. Rolleston.

Chondrodysplasia (*'Amer. Journ. Dis. Child.,'* 1920, xix, *p.* 189).—**H. L. Dwyer** reports four cases of this condition, three of which occurred in the same family. Many variations of hereditary deforming chondrodysplasia may be met with, ranging from the multiple small cartilaginous exostoses, giving the patient no trouble, to great deformities with dwarfing, paralysis, aneurysm and malignancy. The disease manifests itself in infancy. One of Dwyer's patients, who was aged 20 months, is the youngest in whom the disease has been reported. The disease has much in common with chondrodystrophy of infancy and adolescence and probably a close relationship exists between them. J. D. Rolleston.

Gigantism of the breasts (*'Dub. Journ. Med. Science,'* 4th ser., 1920, *p.* 187).—**B. F. Honan** reports a case in a girl, aged 16 years. The breasts were amputated, and histological examination showed a structure similar to that of fibro-adenoma, with a small amount of cellular infiltration in the neighbourhood of some of the gland acini. J. Allan.

Traumatic aneurysms in childhood (*'Rev. Españ. de med. y cir.,'* 1920, iii, *p.* 379).—**M. H. Vegas** reports three cases of traumatic aneurysm in children, which were the only examples of aneurysm among 25,000 admissions to a children's hospital at Buenos Ayres. The first case occurred in a boy, aged 15 years, who, as the result of a pistol-shot, developed an aneurysm of the left internal carotid, followed by right hemiplegia and aphasia. A good result was obtained by ligature of the left common carotid. The second case was in a boy, aged 12 years, who developed an aneurysm of the left radial artery by cutting his arm with a piece of glass. The sac was ligatured above and below and removed. Atrophy of the thenar and hypothenar eminences as well as of the interossei ensued, but improvement took place under massage and electricity. The third case, which occurred in a boy, aged 15 years, was an example of arterio-venous aneurysm at the base of Scarpa's triangle inflicted by a chisel. Reconstructive endo-aneurysmorrhaphy was performed, with an excellent result. J. D. Rolleston.

Fracture-dislocation of cervical spine in a child (*'Med. Journ. Austral.,'* 1920, i, *p.* 311).—**J. G. Edwards.**—A skiagram revealed fracture of the odontoid process of the axis and forward dislocation of the atlas in a child, aged 4 years, incurred as the result of an accident. The dislocation was reduced by the anæsthetist by suddenly pushing forward the lower jaw and extending the head during the administration of the anæsthetic.
F. R. B. Atkinson.

Bronchitis due to empyema of the maxillary antrum (*'Med. Journ. Austral.,'* 1920, i, *p.* 487).—**A. E. Mills** describes three cases, in a boy, aged 6 years, girl, aged 9 years, and a boy, aged 14 years, in all of whom empyema of the antrum was associated with bronchitis. He considers the bronchitis was the primary trouble, and that other parts of the respiratory tract, including the antra, became infected.
F. R. B. Atkinson.

Gastric perforation in an infant; streptococcal peritonitis (*'Arch. de méd. des enf.,'* 1920, XXIII, *p.* 490).—**Phélip** and **Fey** record the case of a female infant, aged 1 month, admitted to hospital with signs of general peritonitis. Death took place shortly after the operation. At the autopsy a complete perforation was found on the posterior surface of the stomach 1 cm. above the insertion of the great omentum and about 6 cm. from the pylorus. There was also an incomplete perforation 1½ cm. away from the first on the inner aspect of the stomach. Examination of the peritoneal fluid showed an abundance of streptococci. The rest of the organs were macroscopically normal. The exact nature of the gastric ulcers could not be determined. J. D. Rolleston.

A large hernia in a male child (*'Brit. Med. Journ.,'* 1919, I, *p.* 610). —**N. E. Waterfield.**—A boy, aged 7 years, was brought to hospital on account of a large swelling on the right side of the scrotum. The swelling measured 12 in. in circumference and extended half-way down the thigh. It was irreducible. At the operation the sac appeared to contain the whole of the large intestine, from the ileo-cæcal valve to the sigmoid flexure, including the appendix and great omentum. With difficulty this mass was reduced into the abdominal cavity, and the opening at the neck of the sac obliterated. J. Allan.

Two unusual cases of inguinal hernia (*'Edin. Med. Journ.,'* 1919, I, *p.* 388).—**C. F. M. Saint.**—A female child, aged 3 years, had a right inguinal hernia, which was increasing in size and could not be controlled by palliative measures. At the operation the uterus and both ovaries were found in the upper part of the sac. They could be returned to the abdomen, but came out again at once. On closer examination the right round ligament was found to have no intra-abdominal course, so that the right horn of the uterus was really attached to the neck of the hernial sac, and while there was a very long broad ligament on the left side, the right one was very short and almost absent. The second case, a male between 2 and 3 years of age, had a double inguinal hernia, which was only partially reducible on either side. On the right side there were two hydroceles of the cord and on the left side a single hydrocele of the cord. On both sides the hydrocele and hernial sacs were removed. J. Allan.

Acute appendicitis with ileo-cæcal ectopia (*'Rev. méd. Suisse rom.,'* 1920, XL, *p.* 113).—**Cornioley** records a case in a boy, aged 9 years, who presented all the signs and symptoms of acute appendicitis, including McBurney's point. On laparotomy the cæcum was not in its usual position but was found beneath the liver, where it represented the whole of the ascending colon, and curled up beneath was an inflamed appendix, which was removed. Ectopia of the cæcum is not very rare. In some cases the cæcum may be situated in the pelvic cavity, and in others in the lumbar, perirenal or subhepatic areas, as in the present case. All these positions, which are of congenital origin, indicate an excess or arrest of movement of this organ in fœtal life or in the first few years of extra-uterine existence. The occurrence of tenderness at McBurney's point and its absence in the subhepatic region are explained by supposing the existence of a skin area supplied by a spinal segment in which the sensory nerves of a definite part of the alimentary canal terminate. J. D. Rolleston.

Sarcoma of the omentum in a child (*'La Pediatria,'* 1920, XXVIII, *p.* 526).—**V. Sala** records a fatal case of small-celled sarcoma of the omentum in a boy, aged 4 years, which exemplified the following points: (1) Tumours of the omentum may grow very large in children, and as the result of their size and relations to neighbouring organs may lose their mobility, which is the principal characteristic of peritoneal tumours, so that the diagnosis is almost always difficult. (2) Pain is an almost constant symptom of tumours of the omentum. (3) Throughout the course of these tumours the symptoms due to pressure on the subjacent organs almost entirely dominate the clinical picture. (4) Sudden death is liable to occur, not as the result of cachexia, but owing to compression caused by the enormous development of the tumour. J. D. ROLLESTON.

Circumscribed traumatic serous peritonitis (*'Il Policlinico,'* ser. prat., 1919, XXVI, *p.* 1427).—**G. Aboularage** reports a case in a boy, aged 7 years, following a violent blow in the epigastric region. The result was a contusion of the stomach and transverse colon without perforation, followed by adhesive peritonitis between the two viscera, and finally perforation, which was favoured by the action of the gastric juice on the walls of the stomach and colon. Signs of intestinal hæmorrhage, adhesive peritonitis and circumscribed serous peritonitis in the upper left quadrant of the abdomen set in, and finally a cystic cavity formed, which on laparotomy was found to be situated between the spleen, stomach, colon and omentum. A post-traumatic gastroentero-anastomosis had obviously taken place, which accounted for the patient's rapid loss of flesh. Owing to his bad general condition further operation was not advisable and death took place one month after the operation. J. D. ROLLESTON.

A case of rupture of the liver, with recovery (*'Med. Journ. Austral.,'* 1920, I, *p.* 32).—**L. Doyle.**—A boy, aged 8 years, was run over by a motor car, and all the symptoms of the case suggested rupture of an abdominal viscus, probably the liver or spleen. Laparotomy was performed and a large tear found in the liver. This was packed with gauze to stop the excessive hæmorrhage and transfusion performed. In due course recovery took place. F. R. B. ATKINSON.

Ophthalmology.

Family degeneration of the macula lutea (*'Journ. Amer. Med. Assoc.,'* 1919, LXXIII, *p.* 1328).—**R. Blue** reports an example of this condition, which was originally described by R. D. Batten in 1897, occurring in a father and daughter. The ætiology is unknown. The disease usually attacks several members of a single childship. The parents commonly show no ocular or other abnormality. It is unusual for more than one generation to be affected. Gentiles are much more frequently attacked than Jews. Sex does not play any considerable *rôle* in its occurrence. The disease is bilateral. It appears between the ages of 7 and 35, but most cases develop between 10 and 14. A slowly progressive course characterises the disease. After a comparatively rapid onset with failure of vision, long periods of arrest may occur. It may finally progress to central blindness. The periphery of the retina, however, is spared, and blindness, idiocy and death do not occur. Objectively the findings are those of a lesion at the macula lutea.
J. D. ROLLESTON.

A case of epicanthus and congenital ptosis (*'Med. Journ. Austral.,'* 1919, I, *p.* 509).—**F. A. Pockley.**—The patient, a girl, whose age is not stated, showed extreme epicanthus and ptosis; the fold of the former partly covered the cornea of each eye, and the bilateral ptosis was so great that the child could not see without raising the eyelid with her finger. The epicanthus was removed by a modification of Rogman's operation, the shape of the incisions being slightly altered and the V-shaped portions of skin excised instead of being transposed. The epicanthus was dealt with first and the ptosis removed a few weeks after by Hess' operation of subcutaneous fixation of the lid to the occipito-frontalis. The result was very successful.

F. R. B. Atkinson.

Vaccine treatment of ophthalmia neonatorum (*'Gaz. hebd. des Sci. méd. de Bordeaux,'* 1920, XLI, *p.* 78).—**E. Ginestous** has treated three cases of ophthalmia neonatorum with Nicolle and Blaizot's anti-gonococcal vaccine. In the first case, in which the treatment was started five days after the onset, both eyes were affected and there was ulceration of the right cornea. After two injections of the vaccine with twenty-four hours' interval between each, the suppuration subsided and recovery took place. In another recent case recovery also followed two intra-gluteal injections. Local treatment was associated with vaccine therapy in both cases. On the other hand, the result was negative in an infant, aged 10 days, five days after the onset of the infection. The suppuration was not checked by six injections, one of which was given daily, and a cure was not obtained until after a fortnight's local treatment. Ginestous comes to the conclusion that the vaccine has a real anti-gonococcal action, but that its occasional failures forbid giving up the classical treatment.

J. D. Rolleston.

Phlyctenular ophthalmia in children (*'Med. Times,'* 1920, XLVIII, *p.* 94).—**P. A. Harry** designates this condition the ocular sign of scrofulosis. He describes a typical case. With regard to treatment, success will depend on the recognition of the fact that the disease is as much a constitutional as a local one. General treatment must be directed towards an alteration of the scrofulous state. A course of treatment with hyd. cum. cret. together with reduction of carbohydrates in the dietary will prove effective. Injections of tuberculin are useful for the obstinate cases, but not as a routine treatment; even more important are healthy surroundings, fresh air, sunlight, and removal from sources of infection. With regard to local treatment, atropine is only necessary in the case of deep ulcers; the old-fashioned remedies, such as the yellow oxide of mercury ointment and drops of 1 per cent. silver nitrate, are still useful in the majority of cases. During convalescence cod-liver oil and malt or an emulsion of the oil by itself will prevent recurrence. Attention should be paid to the mucous membrane of the nose and throat and nasal obstruction corrected.

J. Allan.

Adenoids, chronic conjunctivitis, photophobia (*'New York State Journ. Med.,'* 1919, XIX, *p.* 374).—**G. D. Scott** calls attention to the intimate relationship between eye affections and naso-pharyngeal disease. He reports a case of chronic conjunctivitis in a girl, aged 6 years, which was cured after the tonsils and adenoids had been removed. Photophobia and blepharospasm were extreme.

J. Allan.

Ocular symptoms caused by osteomyelitis of the upper jaw in infants (*'Nederland. Tijdschr. v. Geneesk.,'* 1920, II, *p.* 294).—**E. Marx** has collected thirty-five cases, including three of his own, in infants aged from 3 days to 9 months, in whom ocular symptoms were caused by osteomyelitis of the upper jaw. The cause of the osteomyelitis in the various cases was infection of the nipple, facial erysipelas, injury done by forceps and septic vaginitis. The causal organisms in the few cases in which a bacteriological examination was made were staphylococci, streptococci and gonococci. The ocular symptoms were œdema of the eyelids, lacrymal fistula, conjunctivitis, chemosis and exophthalmos. Eighteen of the cases recovered, 10 died, and in 7 the issue was not recorded. J. D. ROLLESTON.

Splinter of wood in anterior chamber (*'Med. Journ. Austral.,'* 1920 I, *p.* 577).—**J. L. Gibson.**—A splinter penetrated the cornea, passed into the anterior chamber, and crossed it and lodged at the irido-corneal junction of the other side. The lens and iris were uninjured except where the splinter impinged on the iris. The splinter was removed, and the pus-like exudation which occurred after the injury gradually diminished. The patient was a boy, aged 7 years. F. R. B. ATKINSON.

Hernia of vitreous into the anterior châmber (*'Med. Journ. Austral.,'* 1920, I, *p.* 387).—**J. L. Gibson** describes this unusual condition in a boy, aged 11 years, who had been treated at the age of four years for an injury to the same eye. F. R. B. ATKINSON.

What should be our routine in examining cases of squint? (*'New York State Journ. Med.,'* 1920, XX, *p.* 181).—**A. Duane** discusses the investigation of cases of strabismus under the following headings: (1) Ætiological types of squint. (2) *Rôle* of refraction anomalies and defect of fusion sense in causing squint. (3) Diagnosis as affected by successive examinations. (4) Light afforded by history of case. He then details the plan of examination. J. ALLAN.

The diagnosis, prophylaxis and treatment of plumbic ocular neuritis amongst Queensland children (*'Med. Journ. Austral.,'* 1917, II, *p.* 201).—**J. L. Gibson.**—A recent paralytic squint in a child below 8 years of age without an increase of temperature should make one suspicious of lead-poisoning. If the condition of the fundus is not distinctive lumbar puncture should be performed at once. The child should be kept in bed away from painted surfaces and put on salines, dilute sulphuric acid and potassium iodide after some days in 5-gr. doses. The source of the lead is painted railings. F. R. B. ATKINSON.

Congenital word-blindness (*'Med. Journ. Austral.,'* 1920, I, *p.* 593). —**R. G. Macleod** describes three cases in the same family, all boys, aged 16, 14 and 12 years respectively. F. R. B. ATKINSON.

Exophthalmic goitre in a girl (*'Brit. Med. Journ.,'* 1918, II, *p.* 465), —**C. W. Gittens** reports a case in a girl, aged 11 years. All the typical signs were present. With rest in bed and treatment by X rays once a week marked improvement has taken place. An interesting point noted was that the blood-count showed 33 per cent. of lymphocytes. J. ALLAN.

Reviews.

Archivos de Medicina, Cirurgia y Especialidades (Publicacion Quincenal). Redaccion y Administracion Carranza, 20, Madrid. Annual subscription: Spain, 30 pesetas; abroad, 45 pesetas.

Within recent years medical journalism in Spain has shown a remarkable activity, as is seen by the creation of numerous journals devoted to various branches of medicine, including pædiatrics, hæmatology, cardiology, and tuberculosis. We now offer a hearty welcome to a new fortnightly publication which appears under the editorship of Drs. J. Sanchis Banús, A. G. Tapia, V. Celada, R. Fraile, E. Carrasco, J. Torre Blanco, G. Garcia Casal, and José Madinaveitia, with the collaboration of Juan Madinaveitia, L. Urrutia, L. Olivares and G. Maranón. Each number consists of a review or some matter of present day interest, such as the question of aphasia and the variety or plurality of the syphilitic virus, followed by abstracts from the current literature of medicine, surgery, obstetrics and gynæcology, ophthalmology, dermatology, syphilis, and oto-rhino-laryngology. J. D. R.

A Synopsis of Medicine. By Henry Letheby Tidy, M.A., M.D., F.R.C.P., Assistant Physician to St. Thomas's Hospital, Physician to the Great Northern Hospital. Bristol: John Wright & Sons, Ltd., 1920. Price 25s. net.

This work, which is a companion volume to Hey Groves's 'Synopsis of Surgery,' aims at providing a synopsis of the principles of medicine which are of importance at the present time. Its general arrangement is that of Osler's text-book, with the exception of the sections on diseases of the nervous system, of the alimentary system, of the blood and of the circulatory system. Dr. Tidy emphasises the fact that his "synopsis" is not intended to replace a text-book, but is designed for those who have to revise rapidly their knowledge of medicine in general or of some disease in particular—a class which includes the student, the practitioner, the lecturer and examiner. The book is admirably suited for this purpose and is well up to date, including as it does an account of the influenza epidemic of 1918, lethargic encephalitis, trench fever, the artificial pneumothorax treatment of pulmonary tuberculosis, diseases of deficiency in which rickets and infantile scurvy are included, and Babinski's and Freud's theories of hysteria. We miss, however, any mention of Vincent's angina, which even now has not received general recognition in this country.

We wish the work the success which the immense amount of labour involved in its composition deserves. J. D. R.

Clinical Methods: A Guide to the Practical Study of Medicine. By Robert Hutchison, M.D., F.R.C.P., and Harry Rainy, M.D., F.R.C.P.Edin., F.R.S.E. With 16 colour plates and 157 figures in the text. Seventh edition. Revised throughout. London: Cassell & Co., 1920. Price 12s. 6d. net.

The success of this indispensable manual is shown by the fact that barely four years have elapsed since the last edition (*vide* British Journal of Children's Diseases, 1917, xiv, p. 158) and that four reprints have appeared in the interval.

Additions have been made to the chapters dealing with the examination of the heart and of the urine, and several new figures and plates have been added. J. D. R.

FEEBLE-MINDEDNESS IN CHILDREN OF SCHOOL AGE. By C. P. LAPAGE, M.D. 2nd Edition, 1920. Pp. xiv–309. London: Longmans, Green and Co. Price 10s. 6d.

WE are pleased to welcome a second edition of this book, which, although not sufficiently detailed for the physician who is specially concerned with defective children, whether in the consulting room or institution, is nevertheless a useful and clear introduction to the subject for the general practitioner or the lay worker in this field. In addition to a general description of the clinical features of feeble-minded children, the author discusses the causation of this condition, as well as the chief methods of administration. His treatment of this subject strikes one as being somewhat unequal, and the seven pages devoted to a very elementary description of infection and the characteristics of the chief infectious and contagious diseases seem somewhat out of place. The very practical appendix on training and management by Miss Mary Dendy, whose great interest in, and experience of, the feeble-minded are well recognised, is a valuable addition to the book. A. F. T.

THE MENTAL HYGIENE OF CHILDHOOD. By W. A. WHITE, Superintendent, St. Elizabeth's Hospital, Washington. London: W. Heinemann. N.D. Pp. xi + 193. Price 6s. net.

THIS little book by a psychiatrist in general sympathy with psycho-analysis, but not apparently in the closest touch with it, is one of that numerous order which really present amateur variations upon the theme of a master. However, as might have been expected from the name of the publisher, it is an unusually favourable specimen of the type indicated. The author can write and—which is much the same—think. The only fault that lets him down is his ignorance of sexuology generally, as untouched by Freud. This is a common shortcoming of Anglo-Saxon Freudians, but it is unfortunate for his present purpose, which is to extol nurture at the expense of nature, education instead of heredity, infection, as it were, instead of predisposition. For instance, he duly gives Freud's theory of a passing phase of homosexuality at puberty which is reached through narcissism. Of course (as he does not mention) Dessoir has insisted upon a sexual undifferentiation, regarding sex of object, at that epoch; but when Dr. White goes on to teach that adult homosexuality is just a persistence of this passing phase, he neglects the very serious objections to such a theory. To begin with, one need not read, in Moll or Havelock Ellis, many case-histories of inversion to see that there may exist plain evidence of abnormal feeling in early childhood, long before puberty. Again, according to Hirschfeld, psycho-analytic treatment of adult inversion has been a complete failure. Still again, there is the obvious bearing of Steinach's work to be disposed of. The author's minimising of the former bogey of masturbation is of course correct. He does not mention "Angst" from unsatisfied libido. Will it be believed that Freud's name is unmentioned, also, throughout? However, this is preferable to the effusions that used to appear, only a year or two ago, in English medical journals, calling psycho-analysts frauds and pornographers. When will an apology for this urbane attitude be offered? But the times are proving, in fields much wider than psycho-analysis, a saying of a countryman of Dr. White: "Truth," wrote Bryant, the author of 'Thanatopsis,' "will survive if run over by a locomotive; error dies of lockjaw if it pricks its little finger." We are in for a steady and disconcerting display of this phenomenon these next few years. W.C.R.

BRIGHTNESS AND DULNESS IN CHILDREN. By HERBERT WOODROW, Ph.D., Associate Professor of Psychology in the University of Minnesota. Philadelphia: J. B. Lippincott Co. Price 6s. net.

THIS is one of the educational guide series. So much has been written about children at the top and the bottom of the scale—the genius and the mentally defective respectively—that it has obscured to some extent the question of the variations of intelligence of those children who can be classed as within the mean intellectually. The author covers a large field, dealing, as he does, with the relation of mental and physical factors, anatomical and pedagogical ages, psychology, heredity and the organisation of education, but he does it well, and there is a large amount of information in the book, together with many useful quotations and references from the literature of the subject.

The author shows that intelligence can be used in two senses, one to indicate mental age and the other to indicate brightness—just as the word "height" can be similarly used either to indicate actual height in inches or to indicate the state of tallness or shortness. Mental age intelligence increases as the child grows older. He limits the word "intelligence" to the first, *i.e.* mental age, and uses the term "brightness" to indicate the second. He suggests the use of the term "intelligence quotient," *i.e.* $\frac{\text{mental age}}{\text{chronological age}}$. This quotient, provided it remains constant and is not due to transient conditions, enables us to calculate what degree of retardation there will be at later ages. In the chapter on "Brains" it is held that because the greatest part of the development and growth of the brain takes place in the first few years of life, the most critical period of the child's life is the years before he enters school, and that the level of brightness is usually determined during these years.

When dealing with "medical inspection" the author very rightly emphasises the need of following up the cases and seeing that the recommendations of the medical inspector are carried out.

The chapter on anatomical age is interesting and informing. The methods of determination of this age are described and illustrated by radiograms and tables. Much work has been done on this subject by American observers, and it is important because the determination of the anatomical age and its relation to the chronological age helps greatly in estimating whether the child can be submitted to the full pressure of school life or not. The author holds that the well-established fact that on the basis of chronological age girls do better in school than boys is because girls are usually of a superior anatomical age.

There are chapters dealing with mental processes and describing tests for these. In the chapter on the organisation of education the need for different training for dull and superior children is emphasised. Bright children need a different quality of education to dull ones. Many bright children are kept back seriously because they cannot obtain as much education as they can assimilate without mental or physical strain.

C. P. L.

RADIANT MOTHERHOOD. By MARIE STOPES, D.Sc., Ph.D. Pp. 246. 8vo. London: G. P. Putnam's Sons, Ltd., 1920. Price 6s. net.

IN this book it is stated that morning sickness, lineæ albicantes, and abdominal pigmentation can be wholly, fall of the breasts largely, prevented;

that, in a healthy family, genius can be produced almost to a certainty by marriage with "the long-young late-maturing type of woman I have just described"; and that current social revolutionary tendencies are due to embittered feelings inherited from mothers with minds embittered by over-frequent pregnancies. The authoress quotes no special sexuological literature except Havelock Ellis, does not know what perversion is, prescribes, although without a medical qualification, diet suitable for pregnancy, and in her peroration styles herself "God's prophet." Some of her correspondents' letters would be useful to a writer on coitus during pregnancy. Further items to the credit side of the account are an easy flow of rhetoric, and the ability to secure the confidence of the public on a delicate matter.

W. C. R.

PHARMACOPŒIA OF THE QUEEN'S HOSPITAL FOR CHILDREN, BETHNAL GREEN, LONDON, E. Prepared by a Committee of the Medical Staff. Sixth edition. H. K. Lewis & Co., 1920. Price 4s. 6d. net.

THE present edition of this Pharmacopœia, which is edited by Dr. T. H. G. Shore and Dr. G. Bourne, Assistant Physicians to the hospital, differs from the last edition, published in 1911 (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, viii, p. 480), by the omission of some formulæ and the addition of others, notably a group of emulsions in which petroleum forms the basis. In Appendix B certain changes have been made in the directions to mothers in bringing up infants, including the substitution of three-hourly for two-hourly breast feeds from the start. Simple rules for the prevention of summer diarrhœa as adopted by the Medical Officers of Health of Bethnal Green and Hackney have been added. J. D. R.

LA EPIDEMIA DE GRIPPE DE 1918–19. Par JOSE W. TOBIAS. Tesis aprobada por la Facultad de Ciencias Médicas et 31 de Julio de 1919. Buenos Aires: A. Guidi Buffarini, 1920.

THIS thesis, which has been awarded the "Facultad de Ciencias Médicas" prize of Buenos Aires, University is devoted to the study of the epidemic of influenza in the Argentine in 1918–19. The epidemiology, bacteriology, morbid anatomy, symptomatology and prophylaxis are discussed, but a consideration of treatment is not included. The author holds the view that pandemic influenza is distinct from influenza nostras and maintains that the ætiological agent of pandemic influenza is a filterable virus, the respiratory complications being caused by organisms of secondary infection. Numerous cases are recorded and an extensive bibliography is appended.

J. D. R.

MÉTHODES NOUVELLES DE DIAGNOSTIC BIOLOGIQUE ET DE TRAITEMENT DE LA SYPHILIS HÉRÉDITAIRE. By A. LAFAYE. Paris: A. Legrand, 1920.

IN his thesis Dr. Lafaye reviews the modern methods of diagnosis and treatment of inherited syphilis. As regards methods of diagnosis, he considers the Wassermann reaction as far more reliable than the luetin test which, in his experience at Prof. Marfan's Clinic, gives a considerable percentage of positive reactions in infants with no clinical or serological evidence of syphilis.

Many of us will not agree with him that the external jugular vein is the best place from which to obtain blood for the Wassermann reaction; a much simpler procedure is to puncture the heel with a Hagedorn's needle.

With regard to treatment, Dr. Lafaye is a strong upholder of intravenous injection of neosalvarsan, either by the external jugular, the veins of the scalp or the dorsal vein of the foot. We are glad to note that injection of the longitudinal sinus is not recommended as a route for intravenous injection, but is mentioned as a means of obtaining blood for the Wassermann test. We learn, however, that this method has been abandoned in Marfan's clinic, owing to the danger of shock.

It is curious that the excellent results obtained by intramuscular injections of glucose-galyl in syphilitic infants has received little or on attention in France, more especially as this preparation is of French production.

Although Dr. Lafaye does not hold that mercurial treatment can be entirely superseded by neosalvarsan, he relegates it to the background, and makes little mention of it in his thesis. In this, we think, he will find many who disagree with him. C. F. M.

CONDENSED MILK. By Dr. P. LASSABLIÈRE, Director of the Laboratory of the Faculty of Medicine, Paris. Published under the auspices of the monthly review, *La Médecine*, Paris.

WE have been favoured with a copy of a brochure, 'Condensed Milk,' by Dr. P. Lassablière, the purpose of which is frankly to direct attention to the wide sphere of usefulness of this variety of milk. After a short historical *résumé*, the author discusses the manufacture and composition of condensed milk. He then deals with its value from the hygienic, physiological and clinical points of view. Its value as a food and for therapeutic purposes is also considered. It is shown that this milk is of undoubted service in infant-feeding, and can also be utilised with advantage in the gastro-intestinal troubles of infancy, in dysentery, in the diarrhœa of tuberculous patients, etc. It has proved of great benefit in the superalimentation of tuberculous and other patients. This little brochure is essentially practical, and should stimulate interest in the scientific use of condensed milk. The book deserves to be widely read. J. A.

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